STIC Search Report
EIC 1700

STIC Database Tracking Number: 108745

TO:	From:
Hai Vo Location: CP3 11B33 Art Unit : 1771 November 21, 2003 Case Serial Number: 09/931415	Barba Koroma Location: EIC 1700 CP3/4-3D62 Phone: 305-3542 barba.koroma@uspto.gov

Search Notes

Examiner Vo,
Please find attached results of the search you requested. Note that the titles of hits have been listed to help you go through the results set quickly. This is followed by a detailed printout of records.

Various components of the claimed invention as spelt out in the claims were searched in multiple databases. Please let me know if you have any questions.
Thanks.

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=> file caplus
FILE 'CAPLUS' ENTERED AT 10:32:35 ON 21 NOV 2003
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=> file wpix
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    http://thomsonderwent.com/support/userguides/               <<<
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=> d que
L7       288808 SEA FILE=CAPLUS ABB=ON  PLU=ON  CERAMIC
L14         880 SEA FILE=CAPLUS ABB=ON  PLU=ON  L7 AND (AL OR ALUMINA) AND (ZR
                OR ZIRCONIA) AND (MG OR MAGNESI?) AND (SI OR SILICA) AND
                (TITANIA OR TI)
L22           2 SEA FILE=CAPLUS ABB=ON  PLU=ON  GAS SEALS AND (AL OR ALUMINA)
                AND (ZR OR ZIRCONIA) AND (MG OR MAGNESI?) AND (SI OR SILICA)
                AND (TITANIA OR TI)
L23          10 SEA FILE=CAPLUS ABB=ON  PLU=ON  SEALS AND (AL OR ALUMINA) AND
                (ZR OR ZIRCONIA) AND (MG OR MAGNESI?) AND (SI OR SILICA) AND
                (TITANIA OR TI)
L26          10 SEA FILE=CAPLUS ABB=ON  PLU=ON  L22 OR L23
L27          27 SEA FILE=CAPLUS ABB=ON  PLU=ON  L14 AND SEAL?
L28          10 SEA FILE=CAPLUS ABB=ON  PLU=ON  SEALS? AND (AL OR ALUMINA) AND
                (ZR OR ZIRCONIA) AND (MG OR MAGNESI?) AND (SI OR SILICA) AND
                (TITANIA OR TI)
L29          31 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L26 OR L27 OR L28)
L30          31 SEA FILE=CAPLUS ABB=ON  PLU=ON  SEAL? AND L29
L31           9 SEA FILE=CAPLUS ABB=ON  PLU=ON  L30 AND (AIR OR GAS)
L32           7 SEA FILE=WPIX ABB=ON  PLU=ON  SEALS? AND (AL OR ALUMINA) AND
                (ZR OR ZIRCONIA) AND (MG OR MAGNESI?) AND (SI OR SILICA) AND
                (TITANIA OR TI)
L33           5 SEA FILE=WPIX ABB=ON  PLU=ON  CERAMIC AND L32
L34           7 SEA FILE=CAPLUS ABB=ON  PLU=ON  L31 AND CERAMIC
L43          27 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L26 OR L27 OR L28 OR L29 OR
                L30) AND CERAMIC?
L44          29 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L43 OR L31) AND SEAL?
L45        3881 SEA FILE=WPIX ABB=ON  PLU=ON  (AL OR ALUMINA) AND (ZR OR
                ZIRCONIA) AND (MG OR MAGNESI?) AND (SI OR SILICA) AND (TITANIA
                OR TI)
L46          21 SEA FILE=WPIX ABB=ON  PLU=ON  CERAMIC AND SEAL? AND L45
L48          21 SEA FILE=WPIX ABB=ON  PLU=ON  L46 AND CERAMIC?
L51          49 DUP REM L48 L44 L34 L33 L31 (22 DUPLICATES REMOVED)

=> d ti 1-49 l51
YOU HAVE REQUESTED DATA FROM FILE 'CAPLUS, WPIX' - CONTINUE? (Y)/N:y


L51  ANSWER 1 OF 49  WPIX  COPYRIGHT 2003 THOMSON DERWENT on STN
TI   Sealing composition used for sealing glass, metal, or
     ceramics comprises glass powder, flame resistant filler, and heat
     resistant pigment.

L51  ANSWER 2 OF 49  WPIX  COPYRIGHT 2003 THOMSON DERWENT on STN
TI   Semiconductor device comprises resin layer enclosing soldered layer fixing
     chip product and circuit part, the solder layer comprising composite
     having metal powder dispersed in metal matrix.

L51  ANSWER 3 OF 49  CAPLUS  COPYRIGHT 2003 ACS on STN
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TI Semiconductor device, structure, and electronic apparatus

L51 ANSWER 4 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Ink-repellant coating with high wear resistance for printing presses

L51 ANSWER 5 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 1
TI Polymerizable dental composition for dental or medical restoration, has degradable macromonomer, and filler composition having bioactive particles of glass, glass-**ceramics**, calcium phosphates, and/or calcium apatites.

L51 ANSWER 6 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 2
TI **Seal** for use in a solid oxide fuel cell comprises **ceramic** fiber matrix and solid particles interspersed between **ceramic** fibers.

L51 ANSWER 7 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 3
TI High temperature **gas seals** for use in a solid state oxide fuel cell stack

L51 ANSWER 8 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 4
TI Packaging of electronic devices with glass **ceramic** electrically insulating substrates and their manufacture

L51 ANSWER 9 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Bird identification and remote monitoring method, uses capsule containing a transponder which is permanently ingested.

L51 ANSWER 10 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Fiber optic device packaging method e.g. for optical coupler involves depositing thin film to form continuous moisture impervious barrier layer for **sealing** opening, optical fiber and cavity.

L51 ANSWER 11 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Alumina**-based **ceramic** for manufacturing sintered molded shapes

L51 ANSWER 12 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Metal-infiltrated porous **ceramic seals** for mechanical and sliding applications

L51 ANSWER 13 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Hydrogel-packed sheet and its use for warming or cooling body parts or foods

L51 ANSWER 14 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 5
TI **Seal** for rotary unions, bushings, bearings and sliding components comprises metal infiltrated **ceramic** comprising interconnected pore structure.

L51 ANSWER 15 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 6
TI Multilayer hermetic coating in electronic device packaging

L51 ANSWER 16 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 7
TI Formation of anticorrosive laminated coatings and coated material

L51 ANSWER 17 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Pigment composition used in a colorant composition for ink paints or plastics, comprises a powdered substrate material comprising several inorganic particles and a coalescence film of at least one layer of a light absorbing material.

L51 ANSWER 18 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Glass-**ceramic** joining material useful in electrochemical devices such as solid oxide fuel cells and oxygen electrolyzers comprises a blend of at least three metal oxides and matches coefficient of thermal expansion of the components.

L51 ANSWER 19 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Matrix glass for cathode ray tube, plasma display, comprises specific amount of oxides of silicon, lithium, sodium, strontium, titanium, zirconium, cerium and **magnesium** and/or calcium.

L51 ANSWER 20 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 8
TI **Gas**-permeable porous **ceramic** substrates for floating-moving other objects for damage and contamination prevention and their manufacture

L51 ANSWER 21 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Curing optically sensitive material for forming optical filter, by placing in plane optical resonant cavity and exposing to light of preselected wavelength.

L51 ANSWER 22 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Water-resistant and ink-repellent **sealants** for printing machine components

L51 ANSWER 23 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 9
TI Process for manufacturing **ceramic** fibers from the melt, and the **ceramic** fibers obtained and their uses

L51 ANSWER 24 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Use of crystallizable glass compositions as **sealing** material for jacketed cables, and mineral-insulated cables **sealed** with the compositions

L51 ANSWER 25 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 10
TI Al2O3-containing **silica**-based high-temperature-resistant glass staple fiber slivers, and their use

L51 ANSWER 26 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Hermetic **sealing** composition

L51 ANSWER 27 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

TI Compositions for **sealing ceramics**

L51 ANSWER 28 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI **Alumina**-based **ceramics, ceramic** **sealing** disks for sanitary armatures, and manufacture and use of the **ceramics**

L51 ANSWER 29 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 11
TI Sintered **alumina**-based **ceramic** including silicon nitride whiskers, - metal oxide sintering aid and nitrogen can be sintered without pressure and is useful for cutting tools, valves and **seals**..

L51 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 12
TI Formation of self-regenerating bilayered coatings, and the coatings obtained

L51 ANSWER 31 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Manufacture of powdered filler for **sealing** with fluidity

L51 ANSWER 32 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Manufacture of powdered filler for **sealing** with fluidity

L51 ANSWER 33 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 13
TI Composite body containing non-aqueous corrosion-resistant **ceramic** - where **ceramic** is crystalline single-phase sulphide or sulphide-selenide possibly containing oxide filler..

L51 ANSWER 34 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Manufacture of microlaminated composites, and the composites obtained

L51 ANSWER 35 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Low melting **sealing** glass compsn. - based on tellurium oxide, copper oxide and oxide(s) of other elements e.g. **magnesium**, barium, silver etc..

L51 ANSWER 36 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Tellurium oxide low-melting glass for **sealing** electronic paste - containing tellurium oxide, silver oxide and lead and/or zinc oxide and opt. e.g. **magnesium**, titanium, boron etc. oxide(s).

L51 ANSWER 37 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Metal-**ceramic** composite bodies of high wear resistance and strength - comprise nitrided matrix containing insertions of three-dimensional crosslinked aluminium -containing metal phases.

L51 ANSWER 38 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Manufacture of aluminum nitride **ceramics** having electrically conductive metalized surface layer

L51 ANSWER 39 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Glass-**ceramic** ring laser gyroscope frames, and their manufacture

L51 ANSWER 40 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Manufacture of **alumina-silica**, **alumina** -lithia-**silica**, and other glass powders and glass-**ceramics** from gels

L51 ANSWER 41 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 14
TI Forming of **seals** on phosphoric-acid fuel-cell electrode edges

L51 ANSWER 42 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 15
TI High density refractory composite **ceramics** - comprise refractory oxide(s), carbide(s), nitride(s), silicide(s), boride(s) or sulphide(s) and a plastic deformable binder.

L51 ANSWER 43 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Irregularly shaped fine particles, preparation - by spraying inorganic fine particle slurry to form granules and calcining.

L51 ANSWER 44 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Erosion-corrosion resistant coatings for coal-fired boiler tubes. I: Materials selection and evaluation

L51 ANSWER 45 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Simultaneous determination of trace impurities in new **ceramics** by inductively-coupled plasma emission spectroscopy

L51 ANSWER 46 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Joining of **ceramic** to metallic material - by hermetic **sealing** process in presence of powdery pressing medium.

L51 ANSWER 47 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI Joining **ceramic** and metallic materials - by heating and pressing in autoclave using powdered pressing medium then welding.

L51 ANSWER 48 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
TI **Ceramic** body having multilayer covering films - used for abrasion-resistant tools and for cutting tools.

L51 ANSWER 49 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
TI Sinter containing high-density boron nitride

=> d all 1-49 l51
YOU HAVE REQUESTED DATA FROM FILE 'CAPLUS, WPIX' - CONTINUE? (Y)/N:y

L51 ANSWER 1 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2003-442068 [41] WPIX
DNC C2003-117052
TI **Sealing** composition used for **sealing** glass, metal, or **ceramics** comprises glass powder, flame resistant filler, and heat

resistant pigment.
DC L01 L02
IN CHIBA, J; IRISAWA, N
PA (ASAG) ASAHI GLASS CO LTD
CYC 101
PI WO 2003045864 A1 20030605 (200341)* JA 16p C03C008-24
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
ADT WO 2003045864 A1 WO 2002-JP12346 20021127
PRAI JP 2001-366680 20011130
IC ICM C03C008-24
ICS C03C027-10; C03C029-00; C04B037-02
AB WO2003045864 A UPAB: 20030630
NOVELTY - **Sealing** composition comprises glass powder 70-100 weight%, 0-30 weight% flame resistant filler, and 0-5 weight% heat resistant pigment. The glass powder composition contains specified amounts of **silica**, boric oxide, zinc oxide, ceria, **magnesia** + calcia + strontium oxide + barium oxide, **alumina**, tin dioxide + **titania** + **zirconia.** The composition does not contain lead, bismuth, cadmium or aluminum.

DETAILED DESCRIPTION - The glass powder has the following composition: 7-17 weight% **silica**, 17-27 weight% boric oxide, 55-65 weight% zinc oxide, 0.01-5 weight% ceria, 0.5-10 weight% **magnesia** + calcia + strontium oxide + barium oxide, 0.1-5 weight% **alumina**, 0.01-3 weight% tin dioxide + **titania** + **zirconia.** The composition does not contain lead, bismuth, cadmium or aluminum.

INDEPENDENT CLAIMS are also included for the following:

(1) a **sealing** material comprising 100 parts by weight of the **sealing** composition, 1-6 parts by weight of binder, and 0.05-2 weight% release agent, in which the binder is selected from polyethylene glycol, polyethylene oxide and acrylic resin, and the release agent is selected from strearic acid, lauric acid, metal stearate, metal laurate, flow paraffin or paraffin wax; and

(2) preparation of a bound product using the **sealing** material.

USE - The composition is used for **sealing** glass, metal, or **ceramics.**

ADVANTAGE - The sintered products using the **sealing** material do not discolor or have carbon residues, and have improved electric insulating ability and reliability.

Dwg.0/0
FS CPI
FA AB
MC CPI: L01-A01B; L01-A01C; L01-A03A; L01-A03C2; L01-A06C; L01-H07; L02-A

L51 ANSWER 2 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2003-300940 [29] WPIX

DNN N2003-239373 DNC C2003-078571
TI Semiconductor device comprises resin layer enclosing soldered layer fixing chip product and circuit part, the solder layer comprising composite having metal powder dispersed in metal matrix.
DC L03 P55 U11 V04
IN ENDOH, T; KODAMA, H; KURIHARA, Y; NAKAJIMA, H; NEGISHI, M; SAKURAI, Y; TAKAHASHI, Y; YAMAURA, M
PA (HITA) HITACHI LTD; (HITA-N) HITACHI TOBU SEMICONDUCTOR KK
CYC 28
PI WO 2003021664 A1 20030313 (200329)* JA 105p H01L021-60
RW: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
W: CN JP KR SG US
ADT WO 2003021664 A1 WO 2002-JP8631 20020827
PRAI JP 2001-262647 20010831
IC ICM H01L021-60
ICS B23K035-26
AB WO2003021664 A UPAB: 20030505
NOVELTY - Semiconductor apparatus comprises resin layer enclosing soldered layer fixing chip product and circuit part. The solder layer comprises composite having metal powder dispersed in metal matrix.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) a similar device where the solder layer is **sealed** with a resin layer and a metal powder different from the metal matrix is dispersed in the composite material;

(2) a similar device where the metal powder has a higher melt point than the matrix metal;

(3) a structure comprising the semiconductor device fixed on an external circuit parts via a connection layer; and

(4) a structure comprising a circuit part material having circuit patterns, a chip part on the pattern via a solder layer, a resin layer for **sealing** the solder layer, external electrode layer and external circuit part connected in a conductive manner, and (5) an electronic device containing the structure (3).

USE - Preparation of resin-**sealed** circuit elements carried on circuit materials.

ADVANTAGE - Prevents short circuit, broken circuit or slipping of chip parts due to the leaking of circuit material.

DESCRIPTION OF DRAWING(S) - The drawing illustrates the cross-section of the device.

Substrate 1
Circuit pattern 4
Solder layer 5
Metal matrix 5A
Metal powder 5B
Semiconductor element 6
Dwg.2/45
FS CPI EPI GMPI
FA AB; GI
MC CPI: L04-C17A; L04-C20A
EPI: U11-E02A1; V04-X01B

L51 ANSWER 3 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 2003:815600 CAPLUS
DN 139:331197
TI Semiconductor device, structure, and electronic apparatus
IN Takahashi, Yoshimasa; Kurihara, Yasutoshi; Kodama, Hironori; Endo, Tsuneo; Sakurai, Yosuke; Nakajima, Koichi; Negishi, Mikio
PA Hitachi Ltd., Japan; Lunesas Higahi Nihon Semiconductor K. K.
SO Jpn. Kokai Tokkyo Koho, 40 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L021-60
ICS B23K035-26; C22C005-02; C22C011-06; C22C013-00
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 52
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003297873	A2	20031017	JP 2002-93558	20020329
PRAI JP 2002-93558		20020329		

AB A reliable semiconductor device comprises chip and wiring components packaged with a solder layer of a composite of a non-metallic powder dispersed in a metal matrix, and a resin layer for **sealing** the components. Specifically, the metal matrix may comprise a Sn-based metal or an alloy of ≥ 2 of Sn, Sb, Zn, Cu, Ni, Au, Ag, P, Bi, In, Mn, **Mg**, **Si**, Ge, **Ti**, **Zr**, V, Hf, and Pd, the non-metallic powder may comprise an oxide, nitride, boride, carbide, sulfide, P, silicide, fluoride, **Si**, Ge, C, and/or B, and the resin layer may comprise an epoxy resin, silicone resin, polybutylene terephthalate, polyphenylene sulfide, polyethylene terephthalate, silicone gel resin, silicone rubber, polyurethane, and/or phenolic resin. A structure having the above solder layer and electronic apparatus, such as a lithium secondary battery, having the above semiconductor device are also described.
ST semiconductor device packaging solder powder composite; lithium secondary battery packaging solder powder composite
IT Telephones
(cellular; semiconductor device packaged with composite solder, structure, and electronic apparatus)
IT Secondary batteries
(lithium; semiconductor device packaged with composite solder, structure, and electronic apparatus)
IT Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(polyamide-; semiconductor device packaged with composite solder, structure, and electronic apparatus)
IT Polyamides, uses
RL: DEV (Device component use); USES (Uses)
(polyimide-; semiconductor device packaged with composite solder, structure, and electronic apparatus)
IT Composites
Electric apparatus

Electronic packages
Electronic packaging materials
Field effect transistors
Glass **ceramics**
Hall devices
Power semiconductor devices
Semiconductor devices
Solders
(semiconductor device packaged with composite solder, structure, and electronic apparatus)

IT Borides
Carbides
Epoxy resins, uses
Fluorides, uses
Glass, uses
Glass fiber fabrics
Nitrides
Oxides (inorganic), uses
Phenolic resins, uses
Polycyanurates
Polyesters, uses
Polyimides, uses
Polysiloxanes, uses
Polyurethanes, uses
Silicides
Silicone rubber, uses
Sulfides, uses
RL: DEV (Device component use); USES (Uses)
(semiconductor device packaged with composite solder, structure, and electronic apparatus)

IT 409-21-2, Silicon carbide (SiC), uses 1304-56-9, Beryllia, uses 1314-23-4, **Zirconia**, uses 1314-98-3, Zinc sulfide, uses 1344-28-1, **Alumina**, uses 7440-02-0, Nickel, uses 7440-21-3, Silicon, uses 7440-42-8, Boron, uses 7440-44-0, Carbon, uses 7440-50-8, Copper, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses 7631-86-9, **Silica**, uses 7723-14-0, Phosphorus, uses 7782-42-5, Graphite, uses 7789-75-5, Calcium fluoride, uses 12033-89-5, Silicon nitride, uses 12045-63-5, Titanium boride (TiB2) 12070-12-1, Tungsten carbide (WC) 12136-78-6, Molybdenum disilicide 13463-67-7, **Titania**, uses 22398-80-7, Indium phosphide, uses 24304-00-5, Aluminum nitride 24968-12-5, Polybutylene terephthalate 25038-59-9, Polyethylene terephthalate, uses 25212-74-2, Poly(phenylene sulfide) 50951-31-0, Silver 3.5, tin 96.5 71513-06-9 85538-02-9, Lead 50, tin 50 87308-77-8 112133-61-6 161764-04-1 205983-82-0, Antimony 8, lead 79, silver 1, tin 12 263014-74-0 613259-60-2, Antimony 3.5, tin 96.5 613259-61-3, Antimony 5, nickel 6, phosphorus 0.05, tin 88.95 613259-62-4, Lead 48.5, silver 1.5, tin 50
RL: DEV (Device component use); USES (Uses)
(semiconductor device packaged with composite solder, structure, and electronic apparatus)

L51 ANSWER 4 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:734588 CAPLUS
DN 139:231989
TI Ink-repellant coating with high wear resistance for printing presses
IN Johner, Gerhard; Kirst, Markus
PA MAN Roland Druckmaschinen AG, Germany; Coatec Gesellschaft fuer Oberflaechenveredelung MbH & Co. KG
SO Ger. Offen., 4 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM B41F022-00
ICS B41F013-08; C23C028-00
CC 42-7 (Coatings, Inks, and Related Products)
Section cross-reference(s): 56
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 10208905	A1	20030918	DE 2002-10208905	20020228
PRAI DE 2002-10208905		20020228		

AB The ink-repellent coating on printing press components consists of (1) a wear-resistant metal oxide or a hard metal layer and (2) a **sealant**. The latter is an OH group-containing silicone-modified acrylic resin for crosslinking with isocyanates which is hardened at 20-100°. The oxide **ceramic** layer may consist of Al_2O_3, TiO_2, Cr_2O_3, ZrO_2, SiO_2, Y_2O_3, CeO_2, CaO, and/or MgO. The hard metal layer may consist of Mo, WC-Co, WC-Ni, TiC-Ni, Cr_3C_2-Ni, and/or Ni-Cr-B-**Si**. The coating thickness is 0.03-1.5 mm (preferably 0.1 mm), and its surface roughness is 1-90 μm (preferably 15-20 μm). The **sealant** can be deposited also after grinding and polishing of the wear-protective layer. The coating prevents a breakdown of the printing process.

ST ink repellent wear resistant coating printing press
IT Reinforced plastics
RL: TEM (Technical or engineered material use); USES (Uses)
(fiber-reinforced; ink-repellent coating with high wear resistance for printing presses made of)
IT Printing apparatus
(ink-repellent coating with high wear resistance for)
IT Coating materials
Seals (parts)
(ink-repellent coating with high wear resistance for printing presses)
IT Coating process
(of printing presses with ink-repellent coating having high wear resistance)
IT Acrylic polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(silicone-modified; **sealant** in ink-repellent coating with high wear resistance for printing presses)
IT 1305-78-8, Calcia, uses 1306-38-3, Ceria, uses 1308-38-9, Chromium oxide (Cr_2O_3), uses 1309-48-4, **Magnesia**, uses 1314-23-4, **Zirconia**, uses 1314-36-9, Yttria, uses 1344-28-1, **Alumina**, uses 7631-86-9, **Silica**, uses 13463-67-7, **Titania**, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(**ceramic** layer in ink-repellent coating with high wear resistance for printing presses)

IT 7439-98-7, Molybdenum, uses 12637-51-3 37296-22-3 37327-41-6 58205-17-7 60994-80-1
RL: TEM (Technical or engineered material use); USES (Uses)
(hard metal layer in ink-repellent coating with high wear resistance for printing presses)

IT 7429-90-5, Aluminum, uses 7439-95-4, **Magnesium**, uses 7440-32-6, Titanium, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(ink-repellent coating with high wear resistance for printing presses made of)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; EP 0768351 A1 CAPLUS

(2) Anon; DE 19850968 A1

L51 ANSWER 5 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 1

AN 2003-155813 [15] WPIX

CR 2001-273251 [28]

DNN N2003-122953 DNC C2003-040338

TI Polymerizable dental composition for dental or medical restoration, has degradable macromonomer, and filler composition having bioactive particles of glass, glass-**ceramics**, calcium phosphates, and/or calcium apatites.

DC A14 A96 D21 D22 P32 P34

IN JIA, W; JIN, S

PA (JIAW-I) JIA W; (JINS-I) JIN S; (PENR) PENTRON CORP

CYC 20

PI US 2002120033 A1 20020829 (200315)* 10p A61F002-00
WO 2002078646 A1 20021010 (200315) EN A61K006-083
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

ADT US 2002120033 A1 CIP of US 2000-638206 20000811, Provisional US 2000-251408P 20001205, US 2001-5298 20011205; WO 2002078646 A1 WO 2001-US46526 20011205

PRAI US 2000-251408P 20001205; US 2000-638206 20000811; US 2001-5298 20011205

IC ICM A61F002-00; A61K006-083
ICS A61K006-00; A61L027-44; A61L027-46; C08K003-00; C09J004-00

AB US2002120033 A UPAB: 20030303
NOVELTY - A polymerizable dental composition comprises degradable macromonomer(s) having terminal (meth)acrylate group(s); a curing composition; a filler composition comprising bioactive particles of bioactive glass, bioactive glass-**ceramics**, bioactive calcium phosphates, and/or bioactive calcium apatites; and optionally co-polymerizable (meth)acrylate monomer(s).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a method of forming a dental or medical restoration comprising applying the inventive composition to a site to be restored in a tooth or bone.

USE - The dental composition is used for dental or medical restoration. It can also be used as root canal **sealants**, implant

materials, bone cements, and as pulp capping compositions,
ADVANTAGE - The invention provides strength and integrity to the area of application. It is biocompatible and biodegradable which allows for tissue and bone regrowth.
Dwg.0/0

FS CPI GMPI
FA AB
MC CPI: A02-A03; A02-A09; A04-B09; A04-F06E5; A08-R01; A09-A07; A10-E07B; A12-V02B; D08-A01; D09-C01D

L51 ANSWER 6 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 2
AN 2002-291452 [33] WPIX
DNN N2002-227583 DNC C2002-085479
TI **Seal** for use in a solid oxide fuel cell comprises **ceramic** fiber matrix and solid particles interspersed between **ceramic** fibers.
DC L03 Q65 X16
IN GHOSH, D; THOMPSON, S
PA (GHOS-I) GHOSH D; (THOM-I) THOMPSON S; (GLOB-N) GLOBAL THERMOELECTRIC INC
CYC 97
PI US 2002024185 A1 20020228 (200233)* 11p F16J015-08
WO 2002017416 A2 20020228 (200233) EN H01M008-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001087397 A 20020304 (200247) H01M008-00
EP 1312128 A2 20030521 (200334) EN H01M008-02
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
KR 2003036705 A 20030509 (200358) H01M008-02
ADT US 2002024185 A1 Provisional US 2000-224801P 20000818, US 2001-931415 20010817; WO 2002017416 A2 WO 2001-CA1170 20010817; AU 2001087397 A AU 2001-87397 20010817; EP 1312128 A2 EP 2001-966852 20010817, WO 2001-CA1170 20010817; KR 2003036705 A KR 2003-702350 20030218
FDT AU 2001087397 A Based on WO 2002017416; EP 1312128 A2 Based on WO 2002017416
PRAI US 2000-224801P 20000818; US 2001-931415 20010817
IC ICM F16J015-08; H01M008-00; H01M008-02
ICS F16J015-02
AB US2002024185 A UPAB: 20020524
NOVELTY - A **seal** (10a,10b) for use in a solid oxide fuel cell (22), comprises a matrix of **ceramic** fibers and solid particles interspersed between the **ceramic** fibers.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for gasket **seal** formation method.
USE - Used in a solid oxide fuel cells.
ADVANTAGE - An effective **seal** can be formed by densely compressing **ceramic** powder within the fiber matrix and thereby forming a very torturous leak path for the gases. The fiber matrix acts as

a physical restraint to the **ceramic** powder, and protects the shape of **ceramic** powder throughout its service life. The **ceramic** powder is very tightly packed into the **alumina** matrix, but is not sintered into a contiguous member and remains unsintered at the operating temperatures of the fuel cell. Hence the **seal** retains some flexibility and the **seal** may flex or experience thermal expansion or contraction without breaking down. The **seal** acts as a non-hermetic effective **seal**, when compressed or pre-compressed in the fuel cell leakage paths. The **seal** is not affixed to the contact surfaces of the cell, and thereby allows parts of the cell in contact with the **seal** to slide past each other as they move due to thermal differences, which allows the **seal** to resist vibrations, encountered in an automotive environments.

DESCRIPTION OF DRAWING(S) - The figure shows the fuel cell comprising **seal.**

Seals 10a,10b
Fuel cell 22
Dwg.1/6

FS CPI EPI GMPI
FA AB; GI
MC CPI: L03-E04
EPI: X16-C01A; X16-C15; X16-F01A

L51 ANSWER 7 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 3
AN 2002:158163 CAPLUS
DN 136:203081
TI High temperature **gas seals** for use in a solid state oxide fuel cell stack
IN Ghosh, Debabrata; Thompson, Scott
PA Global Thermoelectric Inc., Can.
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM H01M008-00
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002017416	A2	20020228	WO 2001-CA1170	20010817
	WO 2002017416	A3	20021003		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2002024185	A1	20020228	US 2001-931415	20010817

AU 2001087397 A5 20020304 AU 2001-87397 20010817
EP 1312128 A2 20030521 EP 2001-966852 20010817
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRAI US 2000-224801P P 20000818
WO 2001-CA1170 W 20010817

AB A flexible **seal** for use in a solid state oxide fuel cell stack is formed from a fiber matrix impregnated with a plurality of solid particles. The fibers and particles are preferably **ceramic** and may be formed from **alumina** or **zirconia**. The **seal** may be formed by dipping the fiber matrix into a slurry of the particles in an alc., drying the **seal** and precompressing prior to installation in the fuel cell stack.

ST **seal** solid oxide fuel cell; **ceramic** fiber glass particle **seal** fuel cell

IT Synthetic fibers
RL: DEV (Device component use); USES (Uses)
(aluminum oxide; high temperature **gas seals** for use in solid oxide fuel cell stack)

IT Synthetic fibers
RL: DEV (Device component use); USES (Uses)
(**ceramic**; high temperature **gas seals** for use in solid oxide fuel cell stack)

IT **Ceramics**
(fibers; high temperature **gas seals** for use in solid oxide fuel cell stack)

IT **Seals** (parts)
(**gas**; high temperature **gas seals** for use in solid oxide fuel cell stack)

IT Solid state fuel cells
(high temperature **gas seals** for use in solid oxide fuel cell stack)

IT Synthetic fibers
RL: DEV (Device component use); USES (Uses)
(**magnesium** oxide; high temperature **gas seals** for use in solid oxide fuel cell stack)

IT Glass, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(particles; high temperature **gas seals** for use in solid oxide fuel cell stack)

IT Synthetic fibers
RL: DEV (Device component use); USES (Uses)
(**silica**; high temperature **gas seals** for use in solid oxide fuel cell stack)

IT Synthetic fibers
RL: DEV (Device component use); USES (Uses)
(**titania**; high temperature **gas seals** for use in solid oxide fuel cell stack)

IT Synthetic fibers
RL: DEV (Device component use); USES (Uses)
(**zirconia**; high temperature **gas seals** for use

in solid oxide fuel cell stack)

L51 ANSWER 8 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 4
AN 2002:48034 CAPLUS
DN 136:106208
TI Packaging of electronic devices with glass **ceramic** electrically insulating substrates and their manufacture
IN Terashi, Yoshitake
PA Kyocera Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L023-02
ICS C04B035-16; H01L023-08; H01L023-15; H05K001-03
CC 57-1 (Ceramics)
Section cross-reference(s): 76
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2002016165	A2	20020118	JP 2000-197386	20000629
PRAI JP 2000-197386		20000629		

AB The package comprises a **sealing** lid and an elec. insulating substrate comprising glass **ceramics** having open porosity ≤2%, consisting of SiO2-based glass phase containing alkaline metals and/or alkaline earth metals and **ceramic** fillers, and showing ≤5 + 10-8 atm-cm3/s He adsorption on 2-h exposure in He(g) of 25° and 4.1 MPa. The package is manufactured by **sealing** a lid onto a glass **ceramic** elec. insulating substrate, which is obtained by heat treatment of a green sheet. The green sheet is prepared by (a) mixing 5-50 weight% **ceramic** filler with 50-95 weight% SiO2-based glass containing alkali metals and/or alkaline earth metals or with 50-95 weight% SiO2-based glass and mixed oxides containing alkali metals and/or alkaline earth metals and (b) the heat treatment process is carried out by increasing the temperature at ≤10°/min in the range of 10° below the softening point of the glass and above. Trapping of He **gas** by the insulating substrate is prevented.
ST electronic packaging material glass **ceramic**; helium trapping prevention electronic packaging; silicate glass **ceramic** electronic packaging
IT Alkali metals, uses
Alkaline earth metals
RL: TEM (Technical or engineered material use); USES (Uses)
(glass **ceramics** containing; **silica**-based glass **ceramic** elec. insulating substrates for packaging of electronic devices)
IT Electronic packaging materials
Glass **ceramics**
(**silica**-based glass **ceramic** elec. insulating substrates for packaging of electronic devices)

IT 7631-86-9, **Silica**, processes 12013-47-7, Calcium zirconate (CaZrO3) 12026-13-0, Strontium aluminosilicate (SrAl2Si2O8) 13814-90-9, **Magnesium** strontium silicate (MgSr2Si2O7)
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(**ceramic** fillers; **silica**-based glass **ceramic** elec. insulating substrates for packaging of electronic devices)

IT 1303-86-2, Boron oxide, processes 1304-28-5, Barium oxide, processes 1305-78-8, Calcia, processes 1309-48-4, **Magnesia**, processes 1313-59-3, Sodium oxide, processes 1314-11-0, Strontium oxide, processes 1314-13-2, Zin coxide, processes 7440-09-7, Potassium, processes 12032-30-3, **Magnesium** titanate (MgTiO3) 13451-00-8, Strontium silicate (SrSiO3)
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(glass **ceramics** containing; **silica**-based glass **ceramic** elec. insulating substrates for packaging of electronic devices)

IT 1302-50-7P, Celsian 1302-75-6P, Gahnite 12049-50-2P, Calcium titanate 12060-59-2P, Strontium titanate 12168-52-4P, Ilmenite 14483-19-3P, Diopside 14567-90-9P, Akermanite 14808-60-7P, Quartz, preparation 58984-43-3P, Slawsonite
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(glass **ceramics** containing; **silica**-based glass **ceramic** elec. insulating substrates for packaging of electronic devices)

IT 1302-54-1, Anorthite 1302-67-6, Spinel 1302-88-1, Cordierite 1312-76-1, Potassium silicate 1314-23-4, **Zirconia**, uses 1327-44-2, Potassium aluminosilicate 1344-00-9, Sodium aluminosilicate 1344-09-8, Sodium silicate 1344-28-1, **Alumina**, uses 1344-95-2, Calcium silicate 12047-27-7, Barium titanate, uses 12627-14-4, Lithium silicate 12646-13-8, Lithium aluminosilicate 12650-28-1, Barium silicate 13463-67-7, **Titania**, uses 14681-78-8, Enstatite 15118-03-3, Forsterite
RL: TEM (Technical or engineered material use); USES (Uses)
(glass **ceramics** containing; **silica**-based glass **ceramic** elec. insulating substrates for packaging of electronic devices)

IT 7440-59-7, Helium, miscellaneous
RL: MSC (Miscellaneous)
(packages with prevented trapping of; **silica**-based glass **ceramic** elec. insulating substrates for packaging of electronic devices)

IT 7440-22-4, Silver, uses 7440-50-8, Copper, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(packaging of devices with wirings of; **silica**-based glass **ceramic** elec. insulating substrates for packaging of electronic devices)

L51 ANSWER 9 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2002-519631 [55] WPIX
DNN N2002-411301
TI Bird identification and remote monitoring method, uses capsule containing a transponder which is permanently ingested.
DC P14
IN CAJA LOPEZ, G; FERRIOL DOMENECH, B; VILASECA I VINTRO, J F
PA (GESI-N) GESIMPEX COMERCIAL SL
CYC 97
PI WO 2002045489 A1 20020613 (200255)* ES 19p A01K035-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2002020758 A 20020618 (200262) A01K035-00
ES 2177434 A1 20021201 (200305) E04B001-62
ADT WO 2002045489 A1 WO 2001-ES453 20011126; AU 2002020758 A AU 2002-20758 20011126; ES 2177434 A1 ES 2000-2916 20001205
FDT AU 2002020758 A Based on WO 2002045489
PRAI ES 2000-2916 20001205
IC ICM A01K035-00; E04B001-62
ICS C04B035-10; C04B035-119; C04B035-14; C08L023-04; C08L035-02; C09D005-34; C09D133-10; C09D135-08; C09J133-08; C09J135-08; C09K003-10; E04B001-74; E04B001-94
AB WO 200245489 A UPAB: 20020829
NOVELTY - The bird is made to ingest a capsule containing a transponder, which becomes permanently lodged in the gizzard or stomach.
DETAILED DESCRIPTION - A method for identifying and remote monitoring of birds comprises making the bird ingest a capsule containing a transponder, which becomes lodged in the gizzard or muscular stomach. The capsule is sufficiently hard and resistant for it to remain permanently lodged in the gizzard or stomach without breaking or eroding. The transponder signals communicate with a data capture and processing centre. An INDEPENDENT CLAIM is also included for the capsule, which has a spherical, lenticular or cylindrical shape with flattened ends, and which contains a cavity in at least one end for receiving a transponder and capable of being **sealed** by a suitable material, the capsule comprising a **ceramic** material totally devoid of any porosity, having a density of 2.5-9 g/cm3 and having a weight of 1-75 g.
USE - For monitoring and tracking birds being reared on farms or for hunting, or for ecological or conservation studies of bird species, especially for chickens, turkeys, partridges, pheasants, geese or ducks.
ADVANTAGE - The transponder is not fixed in place externally or subcutaneously, so there is no risk of it becoming detached from the bird.
Dwg.0/7
FS GMPI
FA AB

L51 ANSWER 10 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2003-634735 [60] WPIX

CR 2002-626265 [67]
DNN N2003-504787
TI Fiber optic device packaging method e.g. for optical coupler involves depositing thin film to form continuous moisture impervious barrier layer for **sealing** opening, optical fiber and cavity.
DC P81 V07 W01 W02
IN BROGAN, J A; CENTANNI, M A
PA (GOUN) GOULD ELECTRONICS INC
CYC 1
PI US 2002110330 A1 20020815 (200360)* 12p G02B006-26
ADT US 2002110330 A1 CIP of US 2000-734260 20001211, US 2001-971192 20011004
PRAI US 2001-971192 20011004; US 2000-734260 20001211
IC ICM G02B006-26
ICS G02B006-00
AB US2002110330 A UPAB: 20030919
NOVELTY - The fiber optic device is enclosed within a cavity in a structure having an opening through which optical fiber (22) is extended. A thin film is deposited to form a continuous moisture impervious barrier layer (70) for **sealing** the opening, the optical fiber and the cavity.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the packaged optical device.

USE - For packaging fiber optic device and optic component such as couplers, splitters, sensors used in fiber optic networks and systems.

ADVANTAGE - Retards/prevents slow drift in insertion loss in optic device due to damp/heat environments. Does not require the use of precision components to achieve hermetic **sealing** of optic fibers. The stability and adhesion of moisture barrier layer is improved significantly with greater stability.

DESCRIPTION OF DRAWING(S) - The figure shows the perspective view of fiber optic device packaging method.
coupler 12
optic fiber 22
substrate 32
groove 34
side surface 36
composition 44
moisture impervious barrier layer 70
Dwg.1/4
FS EPI GMPI
FA AB; GI
MC EPI: V07-F01B1A; W01-A06C1; W02-C04B1

L51 ANSWER 11 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:658051 CAPLUS
DN 137:189342
TI **Alumina**-based **ceramic** for manufacturing sintered molded shapes
IN Boettcher, Juergen; Burger, Wolfgang; Kaefer, Dieter; Klotz, Dieter; Lenz, Franz; Sommer, Volker; Wittig, Frank
PA Ceramtec A.-G., Germany
SO PCT Int. Appl., 12 pp.

CODEN: PIXXD2
DT Patent
LA German
IC ICM C04B035-111
ICS F16C033-04; F16J015-34
CC 57-2 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002066397	A1	20020829	WO 2002-EP1381	20020209
	W: JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	DE 10203751	A1	20020829	DE 2002-10203751	20020131
	EP 1362019	A1	20031119	EP 2002-714154	20020209
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI	DE 2001-10107773	A	20010216		
	DE 2002-10203751	A	20020131		
	WO 2002-EP1381	W	20020209		

AB The Al2O3-based **ceramic** contains MgO 1.2-1.4, SiO2 2.5-3.3, TiO2 2.5-2.9, CeO2 1.9-2.1, ZrO2 0.9-1.3, Y2O3 0-0.05, CaO 0-0.3, Fe2O3 0-0.3, and Na2O 0-0.3 weight%. The **ceramic** is milled by rotation or attrition milling so that the resulting **ceramic** has a sp. surface of 4-7 m2/g and can be sintered at 1380-1400°. The resulting sintered **ceramic** work piece has a friction coefficient μ ≤0.2 (or μ = 0.16 by attrition milling). The sintered bodies have also a low friction coefficient and good dry-running properties and can be used as **sealing** disks or sliding rings.

ST **alumina ceramic** rotation milling sintering; **sealing** disk **alumina ceramic**; sliding ring **alumina ceramic**

IT **Ceramics**
(**alumina**-based; for manufacturing sintered molded shapes)

IT Milling (size reduction)
(attrition; of **alumina**-based **ceramic** for manufacturing sintered molded shapes)

IT **Seals** (parts)
(disk; **alumina**-based **ceramic** for manufacturing sintered molded shapes for)

IT Milling (size reduction)
(rotation; of **alumina**-based **ceramic** for manufacturing sintered molded shapes)

IT Machinery parts
(sliding, ring; **alumina**-based **ceramic** for manufacturing sintered molded shapes for)

IT 1305-78-8, Calcia, uses 1306-38-3, Cerium oxide, uses 1309-37-1, Iron oxide, uses 1309-48-4, **Magnesia**, uses 1313-59-3, Sodium oxide, uses 1314-23-4, **Zirconia**, uses 1314-36-9, Yttria, uses 7631-86-9, **Silica**, uses 13463-67-7, **Titania**, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(**alumina**-based **ceramic** containing; for manufacturing sintered molded shapes)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Ceramtec Ag; DE 19648635 A 1998 CAPLUS

L51 ANSWER 12 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:39565 CAPLUS

DN 136:105902

TI Metal-infiltrated porous **ceramic seals** for mechanical and sliding applications

IN Ritland, Marcus A.; Howe, William Todd

PA Coorstek, Inc., USA

SO U.S., 14 pp., Cont.-in-part of U.S. 6,143,421.
CODEN: USXXAM

DT Patent

LA English

IC ICM B32B031-26
ICS B22D019-00; B22F003-11; C04B035-02

NCL 428539500

CC 56-4 (Nonferrous Metals and Alloys)
Section cross-reference(s): 57

FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6338906	B1	20020115	US 1999-438202	19991111
	JP 08501500	T2	19960220	JP 1993-508357	19930917
	US 5676907	A	19971014	US 1994-220560	19940331
	US 5700373	A	19971223	US 1994-220558	19940331
	WO 2001035006	A2	20010517	WO 2000-US31226	20001113
	WO 2001035006	A3	20010927		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI	US 1992-946972	B2	19920917
	WO 1993-US8835	A2	19930917
	US 1994-220558	A2	19940331
	US 1994-220560	A2	19940331
	US 1994-220570	A3	19940331
	US 1997-820164	A2	19970319
	US 1997-949227	A2	19971013
	US 1992-947427	A	19920918
	US 1999-438202	A	19991111

AB The sintered **ceramic** matrix having 15-85% by volume of interconnected porosity is infiltrated with molten metal or alloy by

capillary action, and is applied for mech. face **seals**, bearings, and similar sliding parts resistant to heat and wear. The porous **ceramic** preforms are typically infiltrated with molten Ni, Cu, or their alloys optionally containing minor O for melt stability. The metal-infiltrated **ceramic** composite is useful in sliding contact with both the harder and softer metal parts, shows high resistance to wear, and is resistant to thermal shock. The typical composite was manufactured by sintering Al2O3 **ceramic** to 60% of theor. d., and infiltration with molten Cu-3% O alloy at 1300° to fill the open pores, followed by the final machining for stationary **seal** used in a pump.

ST **ceramic** composite metal infiltration mech **seal** manuf; sintered **alumina** copper melt infiltration sliding **seal** manuf

IT **Sealing** compositions
(**ceramic**-based; porous **ceramic** composites infiltrated with molten metal or alloy for mech. **seals**)

IT **Ceramic** composites
(for **seals**; porous **ceramic** composites infiltrated with molten metal or alloy for mech. **seals**)

IT **Seals** (parts)
(heat-resistant, composites for; porous **ceramic** composites infiltrated with molten metal or alloy for mech. **seals**)

IT Bearings
Pumps
(**seals** for; porous **ceramic** composites infiltrated with molten metal or alloy for mech. **seals**)

IT 7782-44-7, Oxygen, uses
RL: MOA (Modifier or additive use); USES (Uses)
(alloys with, for **seals**; porous **ceramic** composites infiltrated with molten metal or alloy for mech. **seals**)

IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-95-4, **Magnesium**, uses 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses 7440-50-8, Copper, uses 12003-78-0, AlNi 12597-68-1, Stainless steel, uses 12597-70-5, Bronze 12597-71-6, Brass, uses 12649-91-1
RL: MOA (Modifier or additive use); USES (Uses)
(composites with, for **seals**; porous **ceramic** composites infiltrated with molten metal or alloy for mech. **seals**)

IT 409-21-2, Silicon carbide (SiC), uses 1309-37-1, Iron oxide (Fe2O3), uses 1309-48-4, **Magnesia**, uses 1314-13-2, Zinc oxide, uses 1314-23-4, **Zirconia**, uses 1344-28-1, **Alumina**, uses 7631-86-9, **Silica**, uses 12033-89-5, Silicon nitride, uses 12045-63-5, Titanium diboride 13463-67-7, **Titania**, uses 24304-00-5, Aluminum nitride 37220-25-0, Aluminum titanate
RL: TEM (Technical or engineered material use); USES (Uses)
(sintered, for **seals**; porous **ceramic** composites infiltrated with molten metal or alloy for mech. **seals**)

RE.CNT 81 THERE ARE 81 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L51 ANSWER 13 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:856413 CAPLUS
DN 137:358216
TI Hydrogel-packed sheet and its use for warming or cooling body parts or foods
IN Oda, Keizo
PA Oda Shiso K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A61F007-08
ICS A61F007-08; A61F007-10; A61N005-06; C09K003-00; C09K005-00; A23L003-005; A23L003-36
CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 17, 38
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002325787	A2	20021112	JP 2002-2895	20020110

PRAI JP 2001-58621 A 20010302

AB The sheet is manufactured by packing a flat bag with hydrogel essentially containing H2O, crosslinkable water-absorbing polymers, and functional substances, which crosslink the polymers to hold a shape. The sheet may have a heat insulator, e.g. polystyrene foams, sponges, fabrics, paper, etc., on at least one side. The sheet is heated by a microwave oven or hot water or cooled in a refrigerator and applied to body part. The sheet is also useful for warming snack foods, e.g. pizza, noodles in soup, box lunch, etc. or cooling food, e.g. seafood, meat, vegetable, frozen food, etc. A mixture of CM-cellulose Na, poly(Na acrylate), glycerin (thickener), and sorbitan monolaurate was kneaded with dried aluminum hydroxide gel, Ti silicate, kaolin, and H2O to give hydrogel. A bag made of a laminate of nonporous polyethylene and rayon nonwoven fabric was packed with the above hydrogel and heat-**sealed** to give a warming or cooling pad.

ST coolant body food crosslinked water absorbing polymer gel; gel packed sheet body food warmer coolant; CM cellulose aluminum sodium hydrogel body warmer coolant; warmer body food crosslinked water absorbing polymer gel

IT Pasta
(Chinese noodles, udon, buckwheat noodles; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)

IT Coolants
Frozen foods
Fruit
Heating systems
Hydrogels
Meat
Seafood
Thermal insulators
Vegetable
(body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)

IT Medical goods
(body warmers or coolants; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)

IT Bentonite, biological studies
Clays, biological studies
Kaolin, biological studies
Perlite
Zeolites (synthetic), biological studies
RL: FFD (Food or feed use); MOA (Modifier or additive use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(crosslinker or thickener; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)

IT Rice (Oryza sativa)
(donburimono (cooked rice with side dish); body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)

IT **Ceramics**
(far-IR-radiating; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)

IT IR sources
(far-IR; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT Nonwoven fabrics
Paper
Sponges (artificial)
Textiles
(heat insulator; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT Textiles
(knitted, heat insulator; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT Bakery products
(pizza; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT Plastic foams
RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polystyrene, heat insulator; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT Food
(snack, takoyaki, okonomiyaki; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT 9004-32-4, Carboxymethyl cellulose sodium 9086-70-8, Acrylic acid-starch copolymer 25549-84-2, Poly(sodium acrylate)
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT 1309-42-8, **Magnesium** hydroxide 1314-13-2, Zinc white, biological studies 1318-00-9, Vermiculite 1327-44-2, Aluminum potassium silicate 1335-30-4, Aluminum silicate 1344-28-1, **Alumina**, biological studies 2733-46-2, Allantoin hydroxy aluminum 7446-70-0, Aluminum chloride, biological studies 7631-86-9, **Silica**, biological studies 10043-01-3, Aluminum sulfate 10043-67-1, Potassium alum 12511-31-8, **Magnesium** aluminate metasilicate 13463-67-7, **Titania**, biological studies 13473-90-0, Aluminum nitrate 14807-96-6, Talc, biological studies 19088-13-2, Aluminum metasilicate 21645-51-2, Aluminum hydroxide, biological studies 39366-43-3, Aluminum **magnesium** hydroxide 42613-21-8, Titanium silicate 56571-59-6
RL: FFD (Food or feed use); MOA (Modifier or additive use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(crosslinker or thickener; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT 1314-23-4, **Zirconia**, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(far-IR source; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)
IT 9003-53-6, Polystyrene
RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(foams, heat insulator; body and food warming or cooling sheet packed

with crosslinked hydrogel showing good shape retention)
IT 67-64-1, Dimethyl ketone, biological studies 75-07-0, Acetaldehyde, biological studies 107-22-2, Glyoxal 111-30-8, Glutaraldehyde 9003-27-4, Polyisobutylene 9003-28-5, Polybutene 9004-34-6, Cellulose, biological studies 9047-50-1, Dialdehyde starch
RL: FFD (Food or feed use); MOA (Modifier or additive use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(spherical, crosslinker or thickener; body and food warming or cooling sheet packed with crosslinked hydrogel showing good shape retention)

L51 ANSWER 14 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 5
AN 2001-355502 [37] WPIX
CR 1994-118241 [14]; 1995-403775 [51]; 1997-201373 [18]; 1998-062305 [06]; 1998-238824 [21]; 1999-405129 [34]; 2001-023403 [67]; 2002-224987 [19]
DNN N2001-258298 DNC C2001-110213
TI **Seal** for rotary unions, bushings, bearings and sliding components comprises metal infiltrated **ceramic** comprising interconnected pore structure.
DC L02 M22 P53 P73 Q65
IN HOWE, W T; RITLAND, M A; HOWE, T
PA (COOR-N) COORSTEK INC
CYC 94
PI WO 2001035006 A2 20010517 (200137)* EN 28p F16J000-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2001029043 A 20010606 (200152) F16J000-00
US 6338906 B1 20020115 (200208) B32B031-26
ADT WO 2001035006 A2 WO 2000-US31226 20001113; AU 2001029043 A AU 2001-29043 20001113; US 6338906 B1 CIP of US 1992-946972 19920917, CIP of WO 1993-US8835 19930917, CIP of US 1994-220558 19940331, CIP of US 1994-220560 19940331, Div ex US 1994-220570 19940331, CIP of US 1997-820164 19970319, CIP of US 1997-949227 19971013, US 1999-438202 19991111
FDT AU 2001029043 A Based on WO 2001035006; US 6338906 B1 Div ex US 5614043, CIP of US 5676907, CIP of US 5700373, CIP of US 6143421
PRAI US 1999-438202 19991111; US 1992-946972 19920917; WO 1993-US8835 19930917; US 1994-220558 19940331; US 1994-220560 19940331; US 1994-220570 19940331; US 1997-820164 19970319; US 1997-949227 19971013
IC ICM B32B031-26; F16J000-00
ICS B22D019-00; B22F003-11; C04B035-02
AB WO 200135006 A UPAB: 20020502
NOVELTY - The **seal** comprises metal infiltrated **ceramic** comprising a **ceramic** matrix with interconnected pore structure. Metal is infiltrated into the pore structure by capillary action.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the method of making a **seal.**
USE - **Ceramic seal** is used in tribological

applications, especially mechanical face **seals**, rotary unions, sliding gate **seal**, bushings, bearings and sliding or rubbing components.

ADVANTAGE - The **ceramic** has good durability, wear resistance, corrosion resistance, chemical resistance, low permeability, high mechanical strength, high modulus of elasticity, excellent dimensional stability and good thermal conductance. Low friction at seat interface and tribological compatibility with mating member are also provided.

Dwg.0/4

FS CPI GMPI
FA AB
MC CPI: L02-F; L02-J01A; M22-G03K

L51 ANSWER 15 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 6
AN 2001:677114 CAPLUS
DN 135:234840
TI Multilayer hermetic coating in electronic device packaging
IN Featherby, Michael; Dehaven, Jennifer L.
PA Maxwell Electronic Components Group, Inc., USA
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM H01L021-4763
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 75
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001067504	A1	20010913	WO 2001-US7281	20010307
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6368899	B1	20020409	US 2000-520928	20000308
	EP 1269531	A1	20030102	EP 2001-913337	20010307
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	BR 2001009077	A	20030603	BR 2001-9077	20010307
	JP 2003526920	T2	20030909	JP 2001-566180	20010307
	US 2003013235	A1	20030116	US 2002-75706	20020213
PRAI	US 2000-520928	A	20000308		
	WO 2001-US7281	W	20010307		

AB A hermetically coated device includes an integrated semiconductor circuit die, a 1st layer comprising an inorg. material, the 1st layer enveloping the integrated circuit die, a 2nd layer, the 2nd layer enveloping the

integrated semiconductor circuit die. Formation of such device includes steps of providing an integrated semiconductor circuit die, applying a 1st layer comprising an inorg. material, the 1st layer enveloping integrated semiconductor circuit die, and applying a 2nd layer, the 2nd layer enveloping the integrated semiconductor circuit die.

ST multilayer hermetic coating electronic device packaging

IT **Sealing**
(adhesive; multilayer hermetic coating in electronic device packaging)

IT Hafnia
(atomic layer deposition; multilayer hermetic coating in electronic device packaging)

IT **Air**
(carrier **gas** for MOCVD; multilayer hermetic coating in electronic device packaging)

IT Vapor deposition process
(chemical, inorg. **ceramic** layer deposition; multilayer hermetic coating in electronic device packaging)

IT Semiconductor devices
(circuits; multilayer hermetic coating in electronic device packaging)

IT Atomic layer epitaxy
Sol-gel processing
Sputtering
(inorg. **ceramic** layer deposition; multilayer hermetic coating in electronic device packaging)

IT Vapor deposition process
(metalorg., inorg. **ceramic** layer deposition; multilayer hermetic coating in electronic device packaging)

IT Thermal decomposition
(metalorgs.; multilayer hermetic coating in electronic device packaging)

IT Coating process
Electronic packaging process
Encapsulation
Lead frames
(multilayer hermetic coating in electronic device packaging)

IT Films
(multilayer; multilayer hermetic coating in electronic device packaging)

IT Vapor deposition process
(plasma, inorg. **ceramic** layer deposition; multilayer hermetic coating in electronic device packaging)

IT Electric circuits
(semiconductive; multilayer hermetic coating in electronic device packaging)

IT Fluoropolymers, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(sol-gel hybrid with **silica**; multilayer hermetic coating in electronic device packaging)

IT Water vapor
(wire corrosion; multilayer hermetic coating in electronic device packaging)

IT 409-21-2, Silicon carbide, processes 1306-38-3, Ceria, processes 1309-48-4, **Magnesia**, processes 1312-81-8, Lanthanum oxide 1314-23-4, **Zirconia**, processes 1314-36-9, Yttria, processes 1344-28-1, **Alumina**, processes 7631-86-9, **Silica**, processes 12033-89-5, Silicon nitride, processes 12047-27-7, Barium titanate, processes 12060-59-2, Strontium titanate 12627-00-8, Niobium oxide 13463-67-7, **Titania**, processes 24304-00-5, Aluminum nitride 59763-75-6, Tantalum oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(atomic layer deposition; multilayer hermetic coating in electronic device packaging)

IT 1333-74-0, Hydrogen, processes 7440-37-1, Argon, processes 7727-37-9, Nitrogen, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(carrier **gas** for MOCVD; multilayer hermetic coating in electronic device packaging)

IT 7440-44-0, Carbon, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(diamond-like; multilayer hermetic coating in electronic device packaging)

IT 11105-01-4, Silicon oxynitride
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(inorg. **ceramic** layer deposition; multilayer hermetic coating in electronic device packaging)

IT 9052-19-1, Parylene c
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(organic overcoat; multilayer hermetic coating in electronic device packaging)

IT 7782-44-7, Oxygen, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(wire corrosion; multilayer hermetic coating in electronic device packaging)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

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(1) Balda; US 4523372 A 1985 CAPLUS
(2) Hashizume; US 5946556 A 1999 CAPLUS
(3) Miyahara; US 5629559 A 1997
(4) Novich; US 5834891 A 1998
(5) Wills; US 5847467 A 1998
(6) Yerman; US 4198444 A 1980 CAPLUS

L51 ANSWER 16 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 7
AN 2001:403701 CAPLUS
DN 135:23150
TI Formation of anticorrosive laminated coatings and coated material
IN Sato, Takao; Michikata, Masanari; Takano, Yoshio
PA Nittetsu Hardfacing Co., Ltd., Japan; Takayoshi K. K.
SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C23C004-00
ICS C23C004-10
CC 56-4 (Nonferrous Metals and Alloys)
Section cross-reference(s): 55, 57
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001152307	A2	20010605	JP 1999-375950	19991129
PRAI JP 1999-375950		19991129		

AB The process consists of thermal spray of a metal, alloy, cermet, or **ceramic** material, **sealing** of the coating, and lamination of a glass coating on it. The coatings have no open pores and show excellent corrosion resistance to melt, acid, alkali, and corrosive **gas.**

ST anticorrosive coating thermal spray **sealing** glass laminate; plating bath anticorrosive coating thermal spray glass laminate; boiler tube anticorrosive coating thermal spray glass laminate

IT Coating materials
(anticorrosive; formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

IT Aluminoborosilicate glasses
RL: TEM (Technical or engineered material use); USES (Uses)
(calcium **magnesium** potassium sodium zirconium aluminoborosilicate, coating; formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

IT Boiler pipes
Sealing
(formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

IT Glass, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

IT Electrodeposition
(plating bath; formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

IT Coating process
(thermal spraying; formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

IT 11107-04-3, SUS316 11109-50-5, SUS304 12732-02-4, SS400, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(base; formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

IT 1303-86-2, Boria, uses 1305-78-8, Calcia, uses 1309-48-4, **Magnesia**, uses 1313-59-3, Sodium oxide, uses 1314-23-4, **Zirconia**, uses 1335-25-7, Lead oxide 1344-28-1, **Alumina**, uses 7631-86-9, **Silica**, uses 11118-57-3, Chromium oxide 12136-45-7, Potassium oxide, uses 13463-67-7, **Titania**, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(glass component; formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

IT 12012-35-0D, Chromium carbide (Cr3C2), alloyed with hastelloy c4 12182-76-2, Chromium yttrium oxide (cryo3) 12661-86-8 37220-25-0, Aluminum titanium oxide 61400-77-9D, hastelloy c4, alloyed with chromium carbide 138316-56-0 151818-42-7 343238-99-3 343239-00-9
RL: TEM (Technical or engineered material use); USES (Uses)
(thermal-spray coating; formation of anticorrosive laminated coatings of **sealed** thermal-spray coating and glass coating)

L51 ANSWER 17 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2001-374194 [39] WPIX
DNC C2001-114255
TI Pigment composition used in a colorant composition for ink paints or plastics, comprises a powdered substrate material comprising several inorganic particles and a coalescence film of at least one layer of a light absorbing material.
DC A82 G01 G02
IN PHILLIPS, R W; RAKSHA, V
PA (FLEX-N) FLEX PROD INC
CYC 31
PI WO 2001018127 A1 20010315 (200139)* EN 75p C09C003-06
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA CN JP KR
AU 2000062082 A 20010410 (200139) C09C003-06
US 6241858 B1 20010605 (200139) C09C001-00
EP 1224242 A1 20020724 (200256) EN C09C003-06
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
US 6524381 B1 20030225 (200323) C04B014-20
US 2003177949 A1 20030925 (200364) C04B014-20
ADT WO 2001018127 A1 WO 2000-US18795 20000710; AU 2000062082 A AU 2000-62082 20000710; US 6241858 B1 US 1999-389962 19990903; EP 1224242 A1 EP 2000-948607 20000710, WO 2000-US18795 20000710; US 6524381 B1 US 2000-539695 20000331; US 2003177949 A1 Cont of US 2000-539695 20000331, US 2003-371801 20030220
FDT AU 2000062082 A Based on WO 2001018127; EP 1224242 A1 Based on WO 2001018127; US 2003177949 A1 Cont of US 6524381
PRAI US 2000-539695 20000331; US 1999-389962 19990903; US 2003-371801 20030220
IC ICM C04B014-20; C09C001-00; C09C003-06
ICS B32B015-02; C09C001-62; C23C014-00; H05H001-24
AB WO 2001018127 A UPAB: 20010716
NOVELTY - A pigment composition comprises a powdered substrate material (1) and a coalescence film of at least one layer of a light absorbing material (2). (1) comprises several inorganic core particles having an observable surface microstructure. (2) substantially surrounds the core particles. The coalescence film substantially replicates the surface microstructure of the core particles.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(A) forming the pigment composition involves the steps of:
(i) placing (1) in a vacuum chamber containing at least one coating material vaporization source (3);
(ii) generating a coating material vapor from (3) in a dry vacuum process;
(iii) exposing (1) to the coating material vapor in a substantially uniform manner; and
(iv) forming the coalescence film of at least one layer of coating material on (1);
(B) a colorant composition comprising a pigment medium and (1) dispersed in the medium;
(C) a system for forming (1) comprising an inlet for directing (1) into the vacuum chamber, a vapor generator for generating a coating material vapor in the chamber at a low temperature and a device for exposing (1) to the coating material vapor;
(D) a coating apparatus (C1) for depositing the thin coalescence film on (1) comprising the vacuum chamber, (3) and either a vibrating bed or a vibrating conveyor coater. The vibrating bed holds (1) and exposes (1) to coating material vapor. The vibrating conveyer coater circulates (1) and exposes (1) to the coating material vapor; and
(E) a coating apparatus (C2) comprising a vacuum chamber defined by an elongated coating tower structure, several (3) in communication with the vacuum chamber, a device (4) for supplying (1) to the chamber to produce a coated (1) and a collector for collecting the coated (1).
USE - In a colorant formulation for use in paints, ink or plastics (claimed) for various applications to objects and papers, such as motorized vehicles, currency, security documents, household appliances, architectural structures, flooring, fabrics, sporting goods, electronic packaging/housing, toys, product packaging. The pigment composition can also be utilized in forming coating composition, extrusions, electrostatic coatings, glass, **ceramic** materials, cosmetics and ornaments.
ADVANTAGE - The pigment composition exhibits enhanced hiding power, enhanced chroma on a white background and enhanced selected chroma on a black background than the hiding power and chroma of the substrate material. These pigment compositions also exhibits a greater available color gamut. The hardness and good adherence exhibited by the coalescence films on the pigment particle lead to advantages such as durability and the absence of rub-off coating losses. The process uses cheaper materials and permits the production of highly adherent and hard films that do not easily detach themselves from the substrate. The dry processes used for the production of the pigment compositions are more environmentally friendly and comparatively less hazardous than conventional technique. The method do not require the incorporation of catalytic ions such as palladium or tin ions which disadvantageously prevent the subsequent use of the manufactured pigments in various consumer products.
Dwg.0/15

FS CPI
FA AB
MC CPI: A08-E02; G01-B02; G02-A04B

L51 ANSWER 18 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2001-168696 [17] WPIX

KOROMA EIC1700

DNN N2001-121636 DNC C2001-050421
TI Glass-**ceramic** joining material useful in electrochemical devices such as solid oxide fuel cells and oxygen electrolyzers comprises a blend of at least three metal oxides and matches coefficient of thermal expansion of the components.
DC E36 L02 X16
IN ARMSTRONG, T R; MEINHARDT, K D; PEDERSON, L R; VIENNA, J D
PA (BATT) BATTELLE MEMORIAL INST
CYC 95
PI WO 2001009059 A1 20010208 (200117)* EN 17p C04B037-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2000064980 A 20010219 (200129) C04B037-00
EP 1200371 A1 20020502 (200236) EN C04B037-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SI
US 6430966 B1 20020813 (200255) C03C008-22
JP 2003506304 W 20030218 (200315) 19p C04B037-00
US 6532769 B1 20030318 (200322) C03C010-08
ADT WO 2001009059 A1 WO 2000-US20534 20000728; AU 2000064980 A AU 2000-64980 20000728; EP 1200371 A1 EP 2000-952248 20000728, WO 2000-US20534 20000728; US 6430966 B1 US 1999-365343 19990730; JP 2003506304 W WO 2000-US20534 20000728, JP 2001-514265 20000728; US 6532769 B1 CIP of US 1999-365343 19990730, US 2000-562583 20000501
FDT AU 2000064980 A Based on WO 2001009059; EP 1200371 A1 Based on WO 2001009059; JP 2003506304 W Based on WO 2001009059; US 6532769 B1 CIP of US 6430966
PRAI US 2000-562583 20000501; US 1999-365343 19990730
IC ICM C03C008-22; C03C010-08; C04B037-00
ICS C03C008-24; C04B037-02; H01M002-08
AB WO 200109059 A UPAB: 20010328
NOVELTY - A joint material between a solid **ceramic** component and at least one other solid component comprises a blend of at least three metal oxides. The joint matches a coefficient of thermal expansion of the solid **ceramic** component and the other solid component.

DETAILED DESCRIPTION - A joint material between a solid **ceramic** component (1) and at least one other solid component (2) comprises a blend of at least three metal oxides of M1-M2-M3. M1 is barium oxide (BaO), strontium oxide (SrO), calcium oxide (CaO) and/or **magnesium** oxide (MgO). M2 (2 - 15 mol.%) is **alumina** (Al_2O_3). M3 is **silica** (SiO_2) with upto 50 mol.% of boron oxide (B_2O_3). The joint matches a coefficient of thermal expansion of (1) and (2).

An INDEPENDENT CLAIM is also included for joining (1) and (2) by:

(i) placing the blend of M1-M2-M3 at an interface of (1) and (2) as a pre-assembly;

(ii) heating the pre-assembly to a temperature to cause the blend to flow into the interface as an assembly; and

(iii) cooling the assembly and solidifying the blend to join (1) and (2).

USE - The joint material is useful for joining an oxygen ion pump and a test material in an electrochemical test cell, and for joining an oxygen ion conductor and an interconnect in an oxygen generator or a fuel cell (claimed); particularly useful for joining or **sealing** both tubular and planar solid oxide fuel cells, oxygen electrolyzers and membrane reactors for the production of syngas, commodity chemicals and other products.

ADVANTAGE - The thermal expansion coefficient of the joint is 7 multiply 10-6 - 15 multiply 10-6 deg. C-1 at 25 - 1000 deg. C, matching with the thermal expansion coefficient of the **ceramic** materials to be joined. The joint has no detrimental chemical interactions with the components and maintains a constant coefficient of thermal expansion from the glass to crystalline phase.

Dwg.0/2

FS CPI EPI

FA AB; DCN

MC CPI: E11-Q03J; E31-A01; E31-D01; E31-P02C; E31-Q08; L02-G07
EPI: X16-F01A

L51 ANSWER 19 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2001-640467 [74] WPIX

DNN N2001-478853 DNC C2001-189631

TI Matrix glass for cathode ray tube, plasma display, comprises specific amount of oxides of silicon, lithium, sodium, strontium, titanium, zirconium, cerium and **magnesium** and/or calcium.

DC L01 V05

IN HACHITANI, Y

PA (HOYA) HOYA CORP; (HACH-I) HACHITANI Y

CYC 30

PI EP 1142840 A2 20011010 (200174)* EN 28p C03C003-062
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
CN 1312582 A 20010912 (200202) H01J029-86
US 2001049327 A1 20011206 (200203) C03C003-85
JP 2001302278 A 20011031 (200204) 13p C03C003-095
JP 2001348245 A 20011218 (200206) 10p C03C003-085
JP 2001348248 A 20011218 (200206) 6p C03C003-095
KR 2001082735 A 20010830 (200215) C03C003-04
US 6607999 B2 20030819 (200356) C03C003-085

ADT EP 1142840 A2 EP 2001-103534 20010216; CN 1312582 A CN 2001-112373 20010217; US 2001049327 A1 US 2001-783400 20010215; JP 2001302278 A JP 2001-39656 20010216; JP 2001348245 A JP 2000-166574 20000602; JP 2001348248 A JP 2000-165917 20000602; KR 2001082735 A KR 2001-8000 20010217; US 6607999 B2 US 2001-783400 20010215

PRAI JP 2000-166574 20000602; JP 2000-39096 20000217; JP 2000-165917 20000602

IC ICM C03C003-04; C03C003-062; C03C003-085; C03C003-095; C03C003-85; H01J029-86
ICS C03B027-04; C03C003-087; C03C003-097; C03C003-87; C03C003-95; C03C004-00; C03C015-00; C03C021-00; H01J009-24; H01J029-00

AB EP 1142840 A UPAB: 20011217
NOVELTY - The matrix glass comprises 5-20 mol% of lithium oxide, 3-15 mol% of strontium oxide, 0.1-5 mol% of **zirconia**, 40-70 mol% of **silica**, 0.1-15 mol% of **alumina**, 0.1-10 mol% of sodium oxide, 0.1-15 mol% of **titania**, 0-15 mol% of **magnesia** and/or 0-15 mol% of calcium oxide and cerium oxide.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(a) production of chemically strengthened glass;
(b) chemically strengthened glass;
(c) use of strengthened glass; and
(d) cathode ray tube.
USE - The matrix glass is used as glass panel for cathode ray tube (claimed), field emission display, plasma display.
ADVANTAGE - The thickness and weight of glass are decreased. The glass excels in strength, X-ray absorption coefficient, bonding strength, Young's modulus and devitrification resistance. A stress-strain layer can be formed by ion-exchange, so as to reach a deep layer in the glass. Therefore, distortion and undulation are reduced. The transmissivity of glass can be adjusted, so that the glass can be improved in contrast and display screen can be color-corrected. The glass does not contain lead oxide which is environmentally undesirable. The central portion of the glass has a tensile strength of less than 20 MPa, so that the self-fracture problem is decreased.
Dwg.0/0
FS CPI EPI
FA AB
MC CPI: L01-A01B; L01-A03A; L01-A03C; L01-A04; L01-A05; L01-L04
EPI: V05-A01D1; V05-D01B; V05-D01C5; V05-D07A5C

L51 ANSWER 20 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 8
AN 2000:653693 CAPLUS
DN 133:241640
TI **Gas**-permeable porous **ceramic** substrates for floating-moving other objects for damage and contamination prevention and their manufacture
IN Yamaguchi, Kiyohisa; Nakagawa, Hiroshi
PA Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B038-00
ICS B01D029-01; B65G051-03; C04B041-86; H01L021-50; B65G049-07; H01L021-68
CC 57-2 (Ceramics)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000256074	A2	20000919	JP 1999-103093	19990306
PRAI	JP 1999-103093		19990306		

AB The title substrates are formed with a tightly-**sealed** glass coating on the sides of the substrates. Preferably, the **ceramics** contain Al2O3, SiC, ZrO2, and/or zircon-based components. The substrates are manufactured by: adding 1-15.0 weight% ≥1 of SiO2, TiO2, CaO, MgO, Li2O, Al2O3, K2O, Na2O, CuO, Cr2O3, CeO2, MnO2, and/or NiO into the main **ceramic** substrate components for controlling the substrates having thermal expansion coefficient ≤9 + 10-6 (about 20-800°) and porosity 13-50%, and firing at 1300-1550°. The glass coating on the sides of the substrates are formed by applying a glass frit powder having desired composition and heat treating at 800-1300°. The substrates are especially suitable for non-contact carrying of semiconductor wafers, etc.

ST **gas** permeable porous **ceramic** substrate semiconductor wafer carrying; glass **sealing** layer porous **ceramic** substrate

IT Aluminosilicate glasses
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(calcium aluminosilicate, for coating **ceramic** substrate sides; manufacture of **gas**-permeable porous **ceramic** substrates for floating-moving semiconductor wafers for damage and contamination prevention)

IT Holders
Semiconductor materials
(manufacture of **gas**-permeable porous **ceramic** substrates for floating-moving semiconductor wafers for damage and contamination prevention)

IT **Ceramics**
(porous; manufacture of **gas**-permeable porous **ceramic** substrates for floating-moving semiconductor wafers for damage and contamination prevention)

IT 409-21-2, Silicon carbide, processes 1314-23-4, **Zirconia**, processes 1344-28-1, **Alumina**, processes 14940-68-2, Zircon
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**ceramic** substrates containing; manufacture of **gas**-permeable porous **ceramic** substrates for floating-moving semiconductor wafers for damage and contamination prevention)

IT 1305-78-8, Calcia, processes 1306-38-3, Ceria, processes 1308-38-9, Chromia, processes 1309-48-4, **Magnesia**, processes 1313-13-9, Manganese oxide, processes 1313-59-3, Sodium oxide, processes 1313-99-1, Nickel oxide (nio), processes 1317-38-0, Copper oxide (cuo), processes 7631-86-9, **Silica**, processes 12057-24-8, Lithia, processes 12136-45-7, Potassium oxide, processes 13463-67-7, **Titania**, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**ceramic** substrates containing; manufacture of **gas**-permeable porous **ceramic** substrates for floating-moving semiconductor wafers for damage and contamination prevention)

L51 ANSWER 21 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2001-121904 [13] WPIX
CR 2000-570997 [35]; 2001-079081 [51]
DNC C2001-035278
TI Curing optically sensitive material for forming optical filter, by placing in plane optical resonant cavity and exposing to light of preselected wavelength.
DC A35 A89 L03
IN LAND, P L
PA (USAF) US SEC OF AIR FORCE
CYC 1
PI US 1911 H 20001107 (200113)* 13p B29D011-00
ADT US 1911 H CIP of US 1992-908693 19920701, CIP of US 1993-131919 19931004, CIP of US 1996-583693 19960105, US 1996-583693 19960105
PRAI US 1996-583693 19960105; US 1992-908693 19920701; US 1993-131919 19931004
IC ICM B29D011-00
AB US 1911 H UPAB: 20010307
NOVELTY - Curing an optically sensitive material (11) comprises:
(a) forming a plane optical resonant cavity (15), with partially reflecting plane parallel boundaries which reflect greater than 50% within a selected wavelength range for a light beam having a selected state of polarization, and incident at a selected angle relative to a direction normal to the cavity;
(b) placing an optically sensitive or curable material in the cavity; and
(c) exposing the cavity and material to light of preselected wavelength, to cure the material.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of forming an optical filter using the above method, where the optically sensitive or curable material is holographic or electrooptic. A modulated refractive index pattern (29-32) or a uniform index is produced through the material along the normal direction.
USE - For forming optical filters (claimed).
ADVANTAGE - The cavity enhances the strength of the optical field which promotes rapid curing of the material.
DESCRIPTION OF DRAWING(S) - The drawing shows a view of an optical arrangement as above with mirrors placed to retroreflect a primary beam back toward the cavity, where the supporting substrate dimensions are shrunk to zero so that rays shown outside the cavity are in air.
material 11
cavity 15
reflectors 16, 17
index modulation patterns 29-32
Dwg.2a/6
FS CPI
FA AB; GI
MC CPI: A11-C02B; A12-E11; A12-L03D; L03-G02; L03-G04B

L51 ANSWER 22 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:356870 CAPLUS
DN 132:349104
TI Water-resistant and ink-repellent **sealants** for printing machine

components
IN Edisch, Martin; Kirst, Markus; Johner, Gerhard
PA Man Roland Druckmaschinen A. G., Germany
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09D183-04
ICS B05D007-24; C09D005-00; C09K003-18
CC 42-11 (Coatings, Inks, and Related Products)
Section cross-reference(s): 74
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000144053	A2	20000526	JP 1999-316014	19991105
	US 2002068179	A1	20020606	US 1999-434239	19991105
	US 6514623	B2	20030204		
PRAI	DE 1998-19850968	A	19981105		

AB Title **sealants** contain polyorganosiloxanes curable at 100-170° and are applied on metal oxide- and/or low abrasive hard metal-covered components. Preferably, a polyhydrogenmethylsiloxane is used. The above metal oxides and/or hard metals are preferably applied by flame-spraying, plasma-spraying, or depositing.
ST water resistance ink repellency polysiloxane **sealant** printing machine component
IT Metals, uses
Oxides (inorganic), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coverings, applied prior the **sealants**; water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)
IT Reinforced plastics
RL: MSC (Miscellaneous)
(fiber-reinforced, apparatus made from; water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)
IT **Ceramics**
(oxide, coverings, applied prior the **sealants**; water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)
IT Printing apparatus
Sealing compositions
(water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)
IT Polysiloxanes, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)
IT 7429-90-5, Aluminum, miscellaneous 7439-95-4, **Magnesium**, miscellaneous 7440-32-6, Titanium, miscellaneous 12597-69-2, Steel, miscellaneous
RL: MSC (Miscellaneous)

(apparatus made from; water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)

IT 7440-02-0, Nickel, uses 7440-48-4, Cobalt, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(composites, coverings, applied prior to the **sealants**; water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)

IT 1305-78-8, Calcium oxide, uses 1308-38-9, Dichromium trioxide, uses 1309-48-4, **Magnesium** oxide, uses 1314-23-4, **Zirconia**, uses 1314-36-9, Yttrium trioxide, uses 1344-28-1, **Alumina**, uses 7439-98-7, Molybdenum, uses 7631-86-9, **Silica**, uses 12014-74-3, Cerium monoxide 13463-67-7, **Titania**, uses 37296-22-3
RL: TEM (Technical or engineered material use); USES (Uses)
(coverings, applied prior to the **sealants**; water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)

IT 12012-35-0, Trichromium dicarbide 12070-08-5, Titanium monocarbide 12070-12-1, Tungsten monocarbide
RL: TEM (Technical or engineered material use); USES (Uses)
(metal composites, coverings, applied prior to the **sealants**; water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)

IT 9004-73-3, Polymethylhydrogensiloxane 49718-23-2, Methylsilanediol homopolymer
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(water-resistant and ink-repellent polysiloxane **sealants** for printing apparatus components)

L51 ANSWER 23 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 9
AN 1999:65029 CAPLUS
DN 130:113959
TI Process for manufacturing **ceramic** fibers from the melt, and the **ceramic** fibers obtained and their uses
IN Rennebeck, Klaus
PA Germany
SO Ger. Offen., 4 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C03B037-00
CC 57-2 (Ceramics)
Section cross-reference(s): 38, 43, 56, 63, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19730996	A1	19990121	DE 1997-19730996	19970718
	WO 9903798	A1	19990128	WO 1998-EP4410	19980715

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,

NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

	AU 9888620	A1	19990210	AU 1998-88620	19980715
	EP 1015400	A1	20000705	EP 1998-940234	19980715
	EP 1015400	B1	20011205		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, FI				
	AT 210106	E	20011215	AT 1998-940234	19980715
	US 2002107134	A1	20020808	US 2002-108327	20020328
PRAI	DE 1997-19730996	A	19970718		
	WO 1998-EP4410	W	19980715		
	US 2000-463050	A1	20000425		

AB The process comprises extruding the molten starting material mixture at ≥1150° through the orifice of a nozzle and allowing the resulting fiber to cool. The parts of the nozzle in contact with the melt consist of a material m. >2200° and having the required corrosion resistance and strength. The resulting fibers, especially hollow fibers, are monolithic and used for manufacturing piezoelec. **ceramics**, implants, heat-resistant conveyor belts, metal-**ceramic** and other composites, components in the electrorheol., safety foils, **gas** -filled foils, support materials, fire-resistant and rot proof paper, for reinforcing building materials and thin-walled plastic components, e.g., for refrigeration, for light transport, thermal insulators, **sealing** compns., and coatings.

ST heat resistant nozzle **ceramic** fiber manuf; tantalum nozzle **ceramic** fiber manuf; tungsten nozzle **ceramic** fiber manuf; Group VIIIB metal nozzle **ceramic** fiber manuf; aluminum nitride nozzle **ceramic** fiber manuf; **zirconia** nozzle **ceramic** fiber manuf; **alumina ceramic** fiber manuf; **magnesia ceramic** fiber manuf; **silica ceramic** fiber manuf; **titania ceramic** fiber manuf; beryllium oxide **ceramic** fiber manuf; monolithic hollow **ceramic** fiber manuf; piezoelec **ceramic** fiber; implant **ceramic** fiber; conveyor belt **ceramic** fiber; metal **ceramic** composite **ceramic** fiber; electrorheol **ceramic** fiber; foil safety **gas** filled **ceramic** fiber; support material **ceramic** fiber; fire resistant rot proof paper **ceramic** fiber; reinforcing building material **ceramic** fiber; plastic **ceramic** fiber; optical fiber; **sealing** compn **ceramic** fiber; coating **ceramic** fiber

IT Synthetic fibers
RL: IMF (Industrial manufacture); PREP (Preparation)
(aluminum oxide, hollow, monolithic, manufacture of; from molten raw materials, corrosion-resistant high-melting nozzles for)

IT Synthetic fibers
RL: IMF (Industrial manufacture); PREP (Preparation)
(beryllium oxide, hollow, monolithic, manufacture of; from molten raw materials, corrosion-resistant high-melting nozzles for)

IT Synthetic fibers

RL: IMF (Industrial manufacture); PREP (Preparation)
(**ceramic**, hollow, monolithic, manufacture of; from molten raw materials, corrosion-resistant high-melting nozzles for)

IT Piezoelectric materials
(**ceramic**; hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for)

IT Reinforced plastics
RL: TEM (Technical or engineered material use); USES (Uses)
(fiber-reinforced; hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for)

IT **Ceramics**
RL: IMF (Industrial manufacture); PREP (Preparation)
(fibers, hollow, monolithic, manufacture of; from molten raw materials, corrosion-resistant high-melting nozzles for)

IT Paper
Paper
(fire-resistant, rot proof. manufacture of; hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for)

IT Conveyor belts
(heat-resistant; hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for)

IT Nozzles
Spinnerets
(high-melting, corrosion-resistant; for hollow monolithic **ceramic** fiber manufacture from molten raw material compns.)

IT Carriers
Coating materials
Electrorheology
Foils
Holders
Optical fibers
Sealing compositions
Thermal insulators
(hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for)

IT Construction materials
(hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for reinforcing of)

IT Prosthetic materials and Prosthetics
(implants; hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for)

IT Synthetic fibers
RL: IMF (Industrial manufacture); PREP (Preparation)
(**magnesium** oxide, hollow, monolithic, manufacture of; from molten raw materials, corrosion-resistant high-melting nozzles for)

IT Group VIII elements
RL: TEM (Technical or engineered material use); USES (Uses)
(nozzles, high-melting, corrosion-resistant; for hollow monolithic **ceramic** fiber manufacture from molten raw material compns.)

IT Fire-resistant materials
Fire-resistant materials
(paper, rot proof. manufacture of; hollow monolithic **ceramic** fiber

manufacture from molten raw material compns. for)
IT **Ceramics**
(piezoelec.; hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for)
IT Metals, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(reinforcing of; hollow monolithic **ceramic** fiber manufacture from molten raw material compns. for)
IT Synthetic fibers
RL: IMF (Industrial manufacture); PREP (Preparation)
(**silica**, hollow, monolithic, manufacture of; from molten raw materials, corrosion-resistant high-melting nozzles for)
IT Synthetic fibers
RL: IMF (Industrial manufacture); PREP (Preparation)
(**titania**, hollow, monolithic, manufacture of; from molten raw materials, corrosion-resistant high-melting nozzles for)
IT Synthetic fibers
RL: IMF (Industrial manufacture); PREP (Preparation)
(**zirconia**, hollow, monolithic, manufacture of; from molten raw materials, corrosion-resistant high-melting nozzles for)
IT 1304-56-9, Beryllium oxide, uses 1309-48-4, **Magnesia**, uses
1314-23-4, **Zirconia**, uses 1344-28-1, **Alumina**, uses
13463-67-7, **Titania**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(melts containing; high-melting corrosion-resistant nozzles for hollow monolithic **ceramic** fiber manufacture from)
IT 7440-25-7, Tantalum, uses 7440-33-7, Tungsten, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(nozzles, high-melting, corrosion-resistant; for hollow monolithic **ceramic** fiber manufacture from molten raw material compns.)
IT 24304-00-5, Aluminum nitride
RL: TEM (Technical or engineered material use); USES (Uses)
(nozzles; for hollow monolithic **ceramic** fiber manufacture from molten raw material compns.)

L51 ANSWER 24 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1999:175771 CAPLUS
DN 130:212675
TI Use of crystallizable glass compositions as **sealing** material for jacketed cables, and mineral-insulated cables **sealed** with the compositions
IN Durschang, Bernhard R.; Reise, Michael
PA Fraunhofer-Gesellschaft Zur Forderung Der Angewandten Forschung E.V., Germany
SO Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM C03C010-04
ICS C03C008-24
CC 57-1 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 900768	A1	19990310	EP 1998-116130	19980826
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	DE 19739242	A1	19990311	DE 1997-19739242	19970908
PRAI	DE 1997-19739242		19970908		

AB The compns. contain SiO_2 40-85, Li_2O 3-20, ZnO 0-40, MgO 0-35, Al_2O_3 0-12, B_2O_3 0-12, P_2O_5 0-8, ZrO_2 0-8, TiO_2 0-10, K_2O 0-10, and Na_2O 0-10 (Na_2O + K_2O ≤15) weight%, and are used as elec. insulating glass-**ceramic sealing** material having coefficient of thermal expansion (α_{21-600}) (10.0-15.) + 10-6/degree. The compns. are especially suitable for use on mineral-insulated cables for sensors for automotive exhaust systems. A composition containing SiO_2 76, Li_2O 8, Al_2O_3 6, B_2O_3 3, P_2O_5 2, and K_2O 5 weight% was crystallized at 650° for 10 h had sp. resistivity >1 MΩ•cm at 600°.

ST glass **ceramic sealing** compn; lithium zinc silicate glass **ceramic**; **magnesium** silicate **sealing** compn

IT Engines
(exhaust systems; glass-**ceramic sealing** compns. for mineral-insulated cables for sensors for)

IT Sensors
(for automotive exhaust systems; glass-**ceramic sealing** compns. for mineral-insulated cables for)

IT **Sealing** compositions
(glass-**ceramics**; for mineral-insulated cables for sensors for automotive exhaust systems)

IT Glass **ceramics**
(**sealing** compns.; for mineral-insulated cables for sensors for automotive exhaust systems)

IT 10034-94-3, **Magnesium** silicate (Mg_2SiO_4) 10102-24-6, Lithium silicate (Li_2SiO_3) 13568-46-2, Lithium silicate ($Li_2Si_2O_5$) 13776-74-4, **Magnesium** silicate ($MgSiO_3$) 28602-08-6, Lithium zinc silicate (Li_2ZnSiO_4)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(formation of; in glass-**ceramic sealing** compns. for mineral-insulated cables for sensors for automotive exhaust systems)

IT 1303-86-2, Boron oxide, uses 1309-48-4, **Magnesia**, uses 1313-59-3, Sodium oxide, uses 1314-13-2, Zinc oxide, uses 1314-23-4, **Zirconia**, uses 1314-56-3, Phosphorus pentoxide, uses 1344-28-1, **Alumina**, uses 7631-86-9, **Silica**, uses 12057-24-8, Lithium oxide, uses 12136-45-7, Potassium oxide, uses 13463-67-7, **Titania**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(in glass-**ceramic sealing** compns. for mineral-insulated cables for sensors for automotive exhaust systems)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Donald, I; Journal of Materials Science 1989, V24(11), P3892 CAPLUS
(2) English Electric Co Ltd; GB 1312700 A 1973 CAPLUS
(3) Heraeus Sensor GMBH; EP 0460349 A 1991

(4) Mattox, D; US 3977857 A 1976 CAPLUS
(5) McCollister, H; US 4414282 A 1983 CAPLUS
(6) McMillan; US 3328145 A 1967 CAPLUS
(7) Shibuya, T; JP 63107832 A 1988 CAPLUS

L51 ANSWER 25 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 10
AN 1998:761849 CAPLUS
DN 129:346380
TI Al2O3-containing **silica**-based high-temperature-resistant glass staple fiber slivers, and their use
IN Richter, Robin; Focke, Thomas; Lehr, Sven
PA Germany
SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DT Patent
LA German
IC ICM C03C025-00
ICS C03C013-00; C03C025-06
CC 57-1 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9851631	A1	19981119	WO 1998-DE1336	19980513
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MX, NO, NZ, PL, PT, RO, RU, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19724874	A1	19981119	DE 1997-19724874	19970612
	AU 9883324	A1	19981208	AU 1998-83324	19980513
	AU 746700	B2	20020502		
	EP 973697	A1	20000126	EP 1998-933527	19980513
	EP 973697	B1	20000719		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, PT, LV, FI				
	BR 9808789	A	20000718	BR 1998-8789	19980513
	AT 194821	E	20000815	AT 1998-933527	19980513
	ES 2150816	T3	20001201	ES 1998-933527	19980513
	JP 2001525783	T2	20011211	JP 1998-548704	19980513
	RU 2209190	C2	20030727	RU 1999-127294	19980513
	CN 1120814	B	20030910	CN 1998-807139	19980513
	NO 9905516	A	19991111	NO 1999-5516	19991111
	MX 9910421	A	20000831	MX 1999-10421	19991112
	US 6468932	B1	20021022	US 2000-423560	20000124
	HK 1022294	A1	20001124	HK 2000-101138	20000225
PRAI	DE 1997-19719814	A	19970513		
	DE 1997-19724874	A	19970612		
	WO 1998-DE1336	W	19980513		

AB The slivers, having a highly textile, cotton-like and voluminous character, obtainable by extraction of a sliver with an inorg. or organic acid, optionally in the presence of sol silicones, contain SiO2 85-99, Al2O3

1-5, Na2O and/or K2O 0-10, CaO 0-3, MgO 0-2, B2O3 0-2, TiO2 0-1, Fe oxides, especially Fe2O3 0-1, ZrO2 0-1, BaO 0-0.5, PbO 0-0.5, ZnO 0-0.5, Cr3O3 0-0.5, and fluoride 0-0.5 weight%. The slivers are used in thermal insulators for furnaces, combustion chambers, and boilers, **gas** pipes, high-temperature **seals** and insulation, sound and thermal insulators in the automobile industry, in the medical field, pipe and elec. insulation, pipelines, shipbuilding, and heat shields, and as reinforcing fibers for bitumens, cement, gypsum, paper, rubber.

ST **silica** sliver glass reinforcing fiber; **alumina** **silica** sliver glass fiber; sound thermal insulator glass fiber; furnace thermal insulator; combustion chamber thermal insulator; boiler thermal insulator; automobile sound thermal insulator; pipe thermal insulator; elec insulator; pipeline thermal insulator; shipbuilding sound thermal insulator; heat shield; bitumen reinforcing glass fiber; cement reinforcing glass fiber; gypsum reinforcing glass fiber; paper reinforcing glass fiber; rubber reinforcing glass fiber

IT Heat shields
Thermal insulators
(**alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for manufacture of)

IT Cement (construction material)
Paper
(**alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for reinforcing of)

IT Bitumens
Rubber, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for reinforcing of)

IT Automobiles
Ships
(**alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for sound- and thermal insulators for)

IT Boilers
Furnaces
Pipelines
(**alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for thermal insulators for)

IT Combustion apparatus
(chambers; **alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for thermal insulators for)

IT Thermal insulators
Thermal insulators
(sound-insulating; **alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for manufacture of)

IT Sound insulators
Sound insulators
(thermally insulating; **alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for manufacture of)

IT 13397-24-5, Gypsum, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(**alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for reinforcing of)

IT 7631-86-9, **Silica**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**alumina**-containing; for high-temperature-resistant glass staple fiber slivers for reinforcement and sound and thermal insulators)

IT 1303-86-2, Boron oxide, uses 1304-28-5, Barium oxide, uses 1305-78-8, Calcia, uses 1308-38-9, Chromium oxide, uses 1309-37-1, Ferric oxide, uses 1309-48-4, **Magnesia**, uses 1313-59-3, Sodium oxide, uses 1314-13-2, Zinc oxide, uses 1314-23-4, **Zirconia**, uses 1317-36-8, Lead oxide (PbO), uses 1332-37-2, Iron oxide, uses 12136-45-7, Potassium oxide, uses 13463-67-7, **Titania**, uses 16984-48-8, Fluoride, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(in **alumina**-containing **silica**-based high-temperature-resistant glass staple fiber slivers for reinforcement and sound and thermal insulators)

IT 1344-28-1, **Alumina**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(in **silica**-based high-temperature-resistant glass staple fiber slivers for reinforcement and sound and thermal insulators)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Asahi Glass Co Ltd; EP 0510653 A 1992 CAPLUS
(2) Nordberg; US 2494259 A 1950 CAPLUS
(3) Parker; US 2491761 A 1949 CAPLUS
(4) Vincent, G; US 3687850 A 1972 CAPLUS

L51 ANSWER 26 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1998:202653 CAPLUS
DN 128:247477
TI Hermetic **sealing** composition
IN Usui, Hiroshi; Manabe, Tsuneo; Harada, Kazuo; Tanabe, Ryuichi
PA Asahi Glass Company Ltd., Japan
SO U.S., 6 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C03C008-24
ICS C03C003-14; C03C003-15
NCL 501017000
CC 57-1 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5733828	A	19980331	US 1997-797118	19970210
	JP 10139478	A2	19980526	JP 1997-29406	19970213
PRAI	JP 1996-27872		19960215		
	JP 1996-240817		19960911		

AB The compns. consist essentially of Bi-type low-melting glass powder 60-99 and low-expansion **ceramic** filler powder 1-40, wherein the low-melting glass consists essentially of Bi2O3 77-95, MgO + ZnO 1-20,

B2O3 2-10, SiO2 0-1, and CeO2 0-10 weight%. The compns. are used for hermetically **sealing** the panel to the funnel of cathode ray tubes (CRT) and for hermetically **sealing** plasma display panels (PDP) and fluorescent character display tubes (VFD).

ST bismuth oxide hermetic **sealing** compn; **magnesia** zinc oxide bismuth oxide; boron oxide **silica** bismuth oxide; cerium dioxide bismuth oxide; glass powder filler **sealing** compn; zircon filler **sealing** compn; cordierite filler **sealing** compn; aluminum titanate filler **sealing** compn; **alumina** filler **sealing** compn; mullite filler **sealing** compn; **silica** filler **sealing** compn; eucryptite filler **sealing** compn; spodumene filler **sealing** compn; quartz filler **sealing** compn

IT Glass, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(bismuth borate; hermetic **sealing** compns. containing **ceramic** powder filler and)

IT Glass, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(bismuth **magnesium** borate; hermetic **sealing** compns. containing **ceramic** powder filler and)

IT Glass powders
RL: TEM (Technical or engineered material use); USES (Uses)
(bismuth oxide-based; hermetic **sealing** compns. containing **ceramic** powder filler and)

IT Glass, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(bismuth zinc borate; hermetic **sealing** compns. containing **ceramic** powder filler and)

IT Fillers
(**ceramic** powder; hermetic **sealing** compns. containing bismuth oxide-based glass powder and)

IT Powders
(**ceramic**, filler; hermetic **sealing** compns. containing bismuth oxide-based glass powder and)

IT Cathode ray tubes
Optical imaging devices
(hermetic **sealing** compns. containing bismuth oxide-based glass powder and **ceramic** powder filler for)

IT **Sealing** compositions
(hermetic; bismuth oxide-based glass powder and **ceramic** powder filler in)

IT **Ceramics**
(powders, filler; hermetic **sealing** compns. containing bismuth oxide-based glass powder and)

IT 1303-86-2, Boron oxide, uses 1306-38-3, Cerium dioxide, uses 1309-48-4, **Magnesia**, uses 1312-43-2, Indium oxide 1314-13-2, Zinc oxide, uses 1314-23-4, **Zirconia**, uses 7631-86-9, **Silica**, uses 13463-67-7, **Titania**, uses 18282-10-5, Tin dioxide
RL: MOA (Modifier or additive use); USES (Uses)
(bismuth oxide-based glass powder containing; hermetic **sealing**

compns. containing **ceramic** powder filler and)
IT 1302-88-1, Cordierite 1302-93-8, Mullite 1344-28-1, **Alumina**, uses 12068-40-5, β-Spodumene 14940-68-2, Zircon 19497-94-0, β-Eucryptite 37220-25-0, Aluminum titanate
RL: TEM (Technical or engineered material use); USES (Uses)
(filler; hermetic **sealing** compns. containing bismuth oxide-based glass powder and)
IT 1304-76-3, Bismuth oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(glass powder containing; hermetic **sealing** compns. containing **ceramic** powder filler and)
IT 14808-60-7, Quartz, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(β-, filler; hermetic **sealing** compns. containing bismuth oxide-based glass powder and)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; RU 775061 1980
(2) Anon; RU 923976 1982
(3) Anon; RU 1477706 1989
(4) Anon; JP 08-59294 1996 CAPLUS
(5) Hikata; US 5643840 1997 CAPLUS
(6) Roberts; US 5252521 1993 CAPLUS

L51 ANSWER 27 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1998:586191 CAPLUS
DN 129:206098
TI Compositions for **sealing ceramics**
IN Nishiyuki, Toshinori; Morita, Takashi; Hatta, Kotaro
PA Iwaki Glass Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C03C008-04
ICS C03C003-066; C04B037-02
CC 57-1 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10236844	A2	19980908	JP 1997-42657	19970226
PRAI	JP 1997-42657		19970226		

AB The compns. comprise ZnO-based glass containing MgO and is essentially free of PbO, show crystal precipitation at ≤900° by heating at 10°/min, and have post-firing average thermal expansion coefficient (at 50-700°) 50 + 10-7-80 + 10-7/°C. Heat-resistant **sealings** can be obtained at ≤900°.
ST zinc oxide glass **sealing** compn; **ceramic** **sealing** heat resistance glass compn
IT **Ceramics**
Sealing compositions
(ZnO-based glass compns. for **sealing ceramics**)

IT Borosilicate glasses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**magnesium** zinc borosilicate; ZnO-based glass compns. for **sealing ceramics**)
IT 1303-86-2, Boron oxide, properties 1304-28-5, Barium oxide, properties 1309-48-4, **Magnesia**, properties 1314-13-2, Zinc oxide, properties 1314-23-4, **Zirconia**, properties 1314-56-3, Phosphorus oxide (P2O5), properties 1344-28-1, **Alumina**, properties 7631-86-9, **Silica**, properties 13463-67-7, **Titania**, properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(glass component; ZnO-based glass compns. for **sealing ceramics**)

L51 ANSWER 28 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1998:351839 CAPLUS
DN 129:31301
TI **Alumina**-based **ceramics, ceramic sealing** disks for sanitary armatures, and manufacture and use of the **ceramics**
IN Sommer, Volker; Friederich, Kilian; Klotz, Dietmar
PA CeramTec A.-G., Germany
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C04B035-117
ICS F16J015-34; F02M037-04
CC 57-2 (Ceramics)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 19648635	A1	19980528	DE 1996-19648635	19961125
PRAI DE 1996-19648635		19961125		

AB The **ceramics** contain MgO ≤1.5, SiO2 0.5-7, Y2O3 ≤1, and ≥1 oxides selected from TiO2, ZrO2, and CeO2 ≤3 each and ≤6 weight% combined. The **ceramics** are manufactured by milling the ingredients to sp. surface area (BET) 2-5 m2/g, molding and predensifying the mixture, optionally together with an organic binder, and sintering the greenware at 1450-1550, preferably 1480-1500°. The **ceramics** are used as **sealing** disks, sliding ring **seals**, and in fuel pumps.
ST **alumina ceramic sealing** disk sanitary china; **magnesia silica alumina ceramic**; **titania zirconia** cerium dioxide **alumina**; sliding ring **seal alumina ceramic**; fuel pump **alumina ceramic**
IT **Ceramics**
(**alumina**; for **sealing** disks for sanitary china and for sliding ring **seals** and fuel pumps)

IT Pumps
(fuel; **alumina**-based **ceramics** for)
IT China
(sanitary ware; **alumina**-based **ceramic** **sealing** disks for)
IT **Seals** (parts)
(sliding; **alumina**-based **ceramic** rings for)
IT 1306-38-3, Cerium dioxide, uses 1314-23-4, **Zirconia**, uses 13463-67-7, **Titania**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**alumina ceramics** containing **magnesia** and **silica** and; for **sealing** disks for sanitary china and for sliding ring **seals** and fuel pumps)
IT 7631-86-9, **Silica**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**alumina ceramics** containing **magnesia** and; for **sealing** disks for sanitary china and for sliding ring **seals** and fuel pumps)
IT 1309-48-4, **Magnesia**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**alumina ceramics** containing **silica** and; for **sealing** disks for sanitary china and for sliding ring **seals** and fuel pumps)
IT 1344-28-1, **Alumina**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**ceramics**; for **sealing** disks for sanitary china and for sliding ring **seals** and fuel pumps)

L51 ANSWER 29 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 11
AN 1995-226169 [30] WPIX
DNC C1995-104068
TI Sintered **alumina**-based **ceramic** including silicon nitride whiskers, - metal oxide sintering aid and nitrogen can be sintered without pressure and is useful for cutting tools, valves and **seals**..
DC L02
IN KANAMARU, M; TATSUNO, T; TSUCHIDA, T
PA (KOBM) KOBE SEIKO SHO KK; (KOBM) KOBE STEEL LTD
CYC 5
PI EP 659708 A1 19950628 (199530)* EN 23p C04B035-80
R: DE FR GB
JP 07232959 A 19950905 (199544) 14p C04B035-10
US 5538926 A 19960723 (199635) 12p C04B035-76
EP 659708 B1 19990519 (199924) EN C04B035-80
R: DE FR GB
DE 69418578 E 19990624 (199931) C04B035-80
ADT EP 659708 A1 EP 1994-309536 19941220; JP 07232959 A JP 1994-106630 19940520; US 5538926 A US 1994-360086 19941220; EP 659708 B1 EP 1994-309536 19941220; DE 69418578 E DE 1994-618578 19941220, EP 1994-309536 19941220
FDT DE 69418578 E Based on EP 659708
PRAI JP 1994-106630 19940520; JP 1993-322654 19931221

REP 1.Jnl.Ref; EP 310342; JP 1103267; US 4507224; WO 8605480; WO 9108994; WO 9311086
IC ICM C04B035-10; C04B035-76; C04B035-80
ICS B23P015-28
ICA B23B027-14
AB EP 659708 A UPAB: 19950804
An Al2O3-based **ceramic** material (A) comprises a sintered Al2O3 containing 5-30 weight% SiC whiskers, 3-30 weight% sintering aid comprising an oxide
or one or more of **Mg**, **Si**, Ca, **Ti**, **Zr**
, Cr, Ni, Y and rare earths, and at least 0.2 weight% nitrogen.
Also claimed are: (i) the above material also containing 0.5-40 weight% of one or more cpds. of transition metals from groups IVa, Va and VIa with C, N and B, (ii) the method of mfg. the material (A) by pressureless sintering a green compact at 1500-1900 deg.C in N2-containing inert gas atmos., and (iii) the method of (ii) to produce the material of (i).
USE - The material is tough, strong and wear and shock resistant for use in cutting tools, die extrusion plugs, pump valves and mechanical **seals.**
Dwg.0/2
FS CPI
FA AB
MC CPI: L02-G11; L02-H02A; L02-J02C

L51 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 12
AN 1995:532258 CAPLUS
DN 122:320701
TI Formation of self-regenerating bilayered coatings, and the coatings obtained
IN Yasutomi, Yoshiyuki; Kikuchi, Shigeru; Saito, Yukio; Nakagawa, Mitsuo; Miyata, Motoyuki
PA Hitachi, Ltd., Japan
SO Ger. Offen., 33 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C04B041-85
ICS C04B041-89; C23C004-06
CC 57-2 (Ceramics)
Section cross-reference(s): 56
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 4433514	A1	19950323	DE 1994-4433514	19940920
DE 4433514	C2	19970116		
JP 07089779	A2	19950404	JP 1993-255197	19930920
PRAI JP 1993-255197		19930920		

AB The process comprises forming an insulating layer, containing a protective material and a reactive material capable of reacting with reactive environmental material to form the protective material, on a base material. The self-regenerating coating materials is suitable for application to **ceramics**, metals, and C fiber-C composites used

in reactive environments. The coatings comprise an oxide layer and a layer containing ≥1 B compds. or a **Si** compound between the oxide layer and the base material. Si3N4 **ceramics**, coated with ZrB2 and ZrO2, were scratched and heated in **air** at 1500° whereby the scratch was **sealed** by reaction with atmospheric O under formation of ZrO2B2O3.

ST self regenerating coating material; **ceramic** crack **sealing** coating material; metal crack **sealing** coating material; carbon fiber composite coating material; oxide reactive coating material; boride reactive coating material; silicon nitride **ceramic** coating; zirconium diboride **zirconia** coating; oxygen boron zirconium oxide coating

IT Carbon fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(composites with carbon; self-regenerating, protective oxide-forming bilayered coatings for)

IT Borides
RL: RCT (Reactant); RACT (Reactant or reagent)
(self-regenerating bilayered coatings for carbon fiber-carbon composites, **ceramics**, and metals exposed to reactive environments)

IT Coating materials
(self-regenerating; self-regenerating bilayered coatings for carbon fiber-carbon composites, **ceramics**, and metals exposed to reactive environments)

IT Oxides, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(surface coating; self-regenerating bilayered coatings for carbon fiber-carbon composites, **ceramics**, and metals exposed to reactive environments)

IT Aluminum alloy, base
Chromium alloy, base
Nickel alloy, base
Titanium alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(self-regenerating, protective oxide-forming bilayered coatings for)

IT 25583-20-4, Titanium nitride
RL: TEM (Technical or engineered material use); USES (Uses)
(**ceramics**, Sialon-containing; self-regenerating, protective oxide-forming bilayered coatings for)

IT 12627-33-7, Titanium carbide nitride
RL: TEM (Technical or engineered material use); USES (Uses)
(**ceramics**, silicon nitride-containing; self-regenerating, protective oxide-forming bilayered coatings for)

IT 409-21-2, Silicon carbide, uses 1302-93-8, Mullite 10043-11-5, Boron nitride, uses 11105-01-4, Silicon nitride oxide 12033-89-5, Silicon nitride, uses 24304-00-5, Aluminum nitride 51184-13-5, Sialon
RL: TEM (Technical or engineered material use); USES (Uses)
(**ceramics**; self-regenerating, protective oxide-forming bilayered coatings for)

IT 7440-44-0, Carbon, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(composites with carbon fibers; self-regenerating, protective oxide-forming bilayered coatings for)

IT 7439-98-7, Molybdenum, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(composites with silicon nitride and Sialon; self-regenerating, protective oxide-forming bilayered coatings for)

IT 7429-90-5, Aluminum, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fiber-reinforced; self-regenerating, protective oxide-forming bilayered coatings for)

IT 7631-86-9, **Silica**, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(hafnium diboride- or zirconium diboride-containing; self-regenerating, protective oxide-forming bilayered coatings for carbon fiber-carbon composites, **ceramics**, and metals exposed to reactive environments)

IT 13701-64-9P
RL: PNU (Preparation, unclassified); PREP (Preparation)
(s self-regenerating, protective oxide-forming bilayered coatings for carbon fiber-carbon composites, **ceramics**, and metals exposed to reactive environments)

IT 11097-15-7, Cast iron, uses 11105-45-6 11121-90-7, Carbon steel, uses 12003-75-7 12597-68-1, Stainless steel, uses 12606-02-9, Inconel 53550-50-8, Chromium, tantalum carbide (TaC) (eutectic) 107992-38-1
RL: TEM (Technical or engineered material use); USES (Uses)
(self-regenerating, protective oxide-forming bilayered coatings for)

IT 1302-67-6, Spinel (**Mg**(AlO2)2) 1305-78-8, Calcia, reactions 1309-37-1, Ferric oxide, reactions 1312-81-8, Lanthanum oxide (La2O3) 1313-96-8, Niobium pentoxide 1314-23-4, **Zirconia**, reactions 1314-36-9, Yttria, reactions 1314-61-0, Tantalum pentoxide 1344-28-1, **Alumina**, reactions 7440-42-8, Boron, reactions 10101-52-7, Zirconium silicon oxide 11104-48-6, Calcium aluminate 11126-28-6, Titanium tungsten oxide 11139-79-0, Aluminum tantalum oxide 12003-65-5, Lanthanum aluminate 12007-09-9, Tungsten boride (Wb) 12007-18-0, Iron boride (FeB2) 12007-24-8, Lanthanum boride (LaB2) 12007-29-3, Niobium diboride 12007-35-1, Tantalum diboride 12013-47-7, Calcium zirconate 12017-11-7, Cobalt silicide (CoSi) 12022-95-6, Iron silicide (FeSi) 12031-32-2, Lanthanum silicide (LaSi) 12035-57-3, Nickel silicide (NiSi) 12036-22-5, Tungsten dioxide 12039-70-2, Titanium silicide (TiSi) 12041-50-8, Aluminum diboride 12042-55-6, Aluminum silicide (AlSi) 12045-63-5, Titanium diboride 12045-64-6, Zirconium diboride 12055-23-1, Hafnium dioxide 12058-19-4, Molybdenum silicide (MoSi) 12069-32-8, Boron carbide (B4C) 12138-26-0, Zirconium silicide (ZrSi) 12429-58-2, Yttrium diboride 12437-21-7, Hafnium silicide (HfSi) 12504-61-9, Tantalum silicide (TaSi) 12678-40-9, Aluminum iron oxide 12788-81-7, Aluminum tungsten oxide 13463-67-7, **Titania**, reactions 14940-68-2, Zircon 37220-25-0, Aluminum titanium oxide 37243-54-2, Aluminum yttrium oxide 37368-09-5, Titanium zirconate 39345-88-5, Niobium zirconium oxide 39361-75-6, Cobalt zirconate 39361-81-4, Iron zirconium oxide 39361-86-9, Nickel

zirconium oxide 39417-40-8, Niobium silicide (NbSi) 51142-09-7, Aluminum niobium oxide 53568-70-0, Calcium chromium oxide 53801-91-5, Chromium titanium oxide 60327-75-5, Lanthanum zirconium oxide (La2ZrO5) 60800-19-3, Aluminum zirconium oxide 61027-35-8, Aluminum hafnium oxide 64417-98-7, Yttrium zirconium oxide 103981-17-5, Calcium boride (CaB2) 104365-48-2, Hafnium zirconium oxide 108658-64-6, Chromium zirconium oxide 139250-05-8, Hafnium yttrium oxide 149661-61-0, Tantalum zirconium oxide 159101-44-7, Lanthanum silicon oxide
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(self-regenerating, protective oxide-forming bilayered coatings for carbon fiber-carbon composites, **ceramics**, and metals exposed to reactive environments)

IT 11104-89-5P, Molybdenum silicon oxide 12643-13-9P, Cobalt silicon oxide 12673-39-1P, Iron silicon oxide 37321-15-6P, Nickel silicon oxide 104365-93-7P, Silicon tantalum oxide 141589-56-2P, Boron silicon titanium oxide 150261-50-0P, Aluminum boron oxide 150261-65-7P, Boron zirconium oxide 156166-76-6P, Aluminum silicon zirconium oxide 158211-17-7P, Aluminum boron silicon oxide 159995-97-8P, Aluminum silicon oxide 160501-46-2P, Boron titanium oxide 163332-35-2P, Boron hafnium oxide 163332-36-3P, Hafnium silicon oxide 163332-37-4P, Boron titanium zirconium oxide 163332-38-5P, Boron iron zirconium oxide 163332-39-6P, Niobium silicon oxide 163332-40-9P, Boron silicon zirconium oxide 163332-41-0P, Molybdenum silicon zirconium oxide 163332-42-1P, Boron silicon titanium zirconium oxide 163332-43-2P, Boron carbon silicon zirconium oxide 163332-44-3P, Boron silicon tungsten oxide 163332-45-4P, Boron hafnium silicon oxide 163332-46-5P, Boron silicon tantalum oxide 163332-47-6P, Boron iron silicon oxide 163332-48-7P, Boron lanthanum oxide 163332-49-8P, Boron lanthanum silicon oxide 163332-50-1P, Boron tantalum oxide 163332-51-2P, Boron niobium oxide 163332-52-3P, Boron iron oxide 163332-53-4P, Boron yttrium oxide 163584-97-2P, Boron tungsten oxide (B2WO6)
RL: PNU (Preparation, unclassified); PREP (Preparation)
(self-regenerating, protective oxide-forming bilayered coatings for carbon fiber-carbon composites, **ceramics**, and metals exposed to reactive environments)

IT 7440-32-6, Titanium, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(silicon carbide-reinforced; self-regenerating, protective oxide-forming bilayered coatings for)

IT 12007-23-7, Hafnium diboride
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(zirconium diboride-containing; self-regenerating, protective oxide-forming bilayered coatings for carbon fiber-carbon composites, **ceramics**, and metals exposed to reactive environments)

L51 ANSWER 31 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1995:849655 CAPLUS
DN 123:304705
TI Manufacture of powdered filler for **sealing** with fluidity
IN Hikata, Hajime; Chimura, Yoshitaka; Yamanaka, Toshiro

PA Nippon Electric Glass Co, Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C03C008-24
ICS C03C008-14; C03C014-00; H01L021-52
CC 76-14 (Electric Phenomena)
Section cross-reference(s): 57
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07196339	A2	19950801	JP 1993-353646	19931228
PRAI JP 1993-353646		19931228		

AB The filler is prepared by mixing crystalline powdered glass and a powdered refractory material, firing at temperature sufficient for crystallization of the glass, while the mixture is sintered to have ≥10 volume% void, and crushing. The filler, e.g., mixture of β-quartz solid solution **Si Al Zn Zr** oxide glass and Fe Se **Zr** oxide **ceramic**, is useful for **sealing** integrated circuit packaging, liquid crystal display device, etc.

ST filler cryst glass blend refractory; **ceramic** cryst glass filler fluidity; firing temp filler cryst glass; electronic device packaging filler; aluminum zinc zirconium silicate glass; iron silicon zirconium oxide **ceramic**

IT Glass, oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses).
(crystalline, zinc zirconium aluminosilicate; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT Electronic device packaging
Filling materials
Refractories
(filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT **Ceramic** materials and wares
(refractories; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT Glass, oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(crystal, lithium aluminosilicate; filler comprising crystal glass and refractory with fluidity for packaging electronic device)

IT Glass, oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(crystal, lithium zirconium titanoaluminosilicate; filler comprising crystal glass and refractory with fluidity for packaging electronic device)

IT Glass, oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(crystal, **magnesium** aluminosilicate; filler comprising crystal glass and refractory with fluidity for packaging electronic device)

IT Glass, oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(crystal, zinc aluminophosphosilicate; filler comprising crystal glass and refractory with fluidity for packaging electronic device)

IT Glass, oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(crystal, zinc aluminosilicate; filler comprising crystal glass and refractory with fluidity for packaging electronic device)

IT Glass, oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(crystal, zinc titanoaluminosilicate; filler comprising crystal glass and refractory with fluidity for packaging electronic device)

IT 1309-37-1, Iron oxide (Fe2O3), processes 1314-13-2, Zinc oxide, processes 1332-29-2, Tin oxide 11129-60-5, Manganese oxide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(**ceramic** from; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT 1314-56-3, Phosphorus oxide (P2O5), processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(glass from; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT 1309-48-4, **Magnesium** oxide, processes 12057-24-8, Lithium oxide, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(glass; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT 1302-88-1, Cordierite 1314-23-4, **Zirconia**, processes 1344-28-1, **Alumina**, processes 7631-86-9, **Silica**, processes 13463-67-7, **Titania**, processes 157911-53-0, Aluminum silicon zinc oxide 169938-79-8, Iron silicon zirconium oxide 169938-80-1, Manganese tin titanium oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(refractory; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

L51 ANSWER 32 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1995:849654 CAPLUS
DN 123:304704
TI Manufacture of powdered filler for **sealing** with fluidity
IN Hikata, Hajime; Chimura, Yoshitaka; Yamanaka, Toshiro

PA Nippon Electric Glass Co, Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C03C008-24
ICS C03C014-00; H01L023-10
CC 76-14 (Electric Phenomena)
Section cross-reference(s): 57
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07196338	A2	19950801	JP 1993-353645	19931228
PRAI JP 1993-353645		19931228		

AB The filler is prepared by mixing crystalline powdered glass and a powdered refractory material and firing at temperature sufficient for crystallization of the glass, while fixing of the glass and the refractory is inhibited. The filler, e.g., mixture of β-quartz solid solution **Si Al** Zn **Zr** oxide glass and Fe Se **Zr** oxide **ceramic**, is useful for **sealing** integrated circuit packaging, liquid crystal display device, etc.

ST filler cryst glass blend refractory; **ceramic** cryst glass filler fluidity; firing temp filler cryst glass; electronic device packaging filler; aluminum zinc zirconium silicate glass; iron silicon zirconium oxide **ceramic**

IT Glass, oxide
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(crystalline, zinc zirconium aluminosilicate; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT Electronic device packaging
Filling materials
Refractories
(filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT **Ceramic** materials and wares
(refractories; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT 1309-37-1, Iron oxide (Fe2O3), processes 1313-13-9, Manganese oxide, processes 1314-13-2, Zinc oxide, processes 1332-29-2, Tin oxide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(**ceramic** from; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT 1309-48-4, **Magnesium** oxide, processes 1314-56-3, Phosphorus oxide (P2O5), processes 12057-24-8, Lithium oxide, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(glass from; filler comprising crystalline glass and refractory with fluidity for packaging electronic device)

IT 1302-88-1, Cordierite 1314-23-4, **Zirconia**, processes
1344-28-1, **Alumina**, processes 7631-86-9, **Silica**,
processes 13463-67-7, **Titania**, processes 157911-53-0,
Aluminum silicon zinc oxide 169767-00-4, Iron zirconium oxide silicate
(Fe0.04Zr0.66O0.74(SiO4)0.32) 169767-01-5, Manganese tin titanium oxide
(Mn0.05Sn0.93Ti0.02O2)
RL: PEP (Physical, engineering or chemical process); TEM (Technical or
engineered material use); PROC (Process); USES (Uses)
(refractory; filler comprising crystalline glass and refractory with
fluidity for packaging electronic device)

L51 ANSWER 33 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 13
AN 1994-302756 [37] WPIX
CR 1992-132036 [16]
DNN N1994-237945 DNC C1994-138055
TI Composite body containing non-aqueous corrosion-resistant **ceramic** -
where **ceramic** is crystalline single-phase sulphide or
sulphide-selenide possibly containing oxide filler..
DC L02 L03 M23 P54 X16
IN KAUN, T D
PA (KAUN-I) KAUN T D; (UYCH-N) UNIV CHICAGO
CYC 19
PI WO 9420246 A1 19940915 (199437)* 32p B23B009-00
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
W: CA JP
US 5455206 A 19951003 (199545) 9p C01G001-12
US 5538810 A 19960723 (199635) 10p H01M002-16
ADT WO 9420246 A1 WO 1994-US2492 19940309; US 5455206 A CIP of US 1990-582525
19900914, US 1993-28782 19930310; US 5538810 A CIP of US 1990-582525
19900914, Div ex US 1993-28782 19930310, US 1995-473757 19950607
FDT US 5455206 A CIP of US 5194298; US 5538810 A CIP of US 5194298, Div ex US
5455206
PRAI US 1993-28782 19930310; US 1990-582525 19900914; US 1995-473757
19950607
REP 01Jnl.Ref; US 4331750; US 4542108
IC ICM B23B009-00; C01G001-12; H01M002-16
ICS C01B017-42
AB WO 9420246 A UPAB: 19951122
A composite body resistant to non-aqueous corrosion comprises a metal or a
ceramic sealed to a crystalline single-phase
sulphide-containing **ceramic** having at least three chemical elements,
the sulphide being present as a sulphide or as a sulphide-selenide
complex. Pref. the single-phase sulphide is a mixture of two or more of the
sulphides of Li, Na, K, Ca, **Al**, **Si**, **Mg**, Y,
Ce, La, Ga, Ba, **Zr**, or Sr.

The composite may also contain 0.5 to 50% by weight of a metal, oxide,
nitride, carbide, or metal sulphide filler, especially CaO, MgO, Al203, or
B203.A1203. Pref. the sulphide **ceramic** contains more than 50
mole % of a sulphide having a heat of formation more negative than -75
kcal/mole and a m.pt. below 1200 deg.C.

USE/ADVANTAGE - Brazing of clad metals and hard-to-weld metals such
as Mo, W or **Ti.** The sulphide or sulphide-selenide

ceramic is resistant to non-aqueous corrosive environments and will provide **ceramic**-metal **seals** stable in such conditions. Its coefft. of thermal expansion can be adjusted to match that of the material to which it is to be bonded, and it provides improved wetting of metal surfaces.
Dwg.1/1

FS CPI EPI GMPI
FA AB; GI
MC CPI: L02-J01C; M23-A04
EPI: X16-A02A; X16-B01F1; X16-F02

L51 ANSWER 34 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1994:441291 CAPLUS
DN 121:41291
TI Manufacture of microlaminated composites, and the composites obtained
IN Henderson, Michael James; Pattabhirami, Reddy K.; Ketcham, Thomas Dale; Share, Leroy Steven; St. Julien, Dell Joseph
PA Corning, Inc., USA
SO Eur. Pat. Appl., 21 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM B32B018-00
ICS B32B015-04
CC 57-2 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 595075	A2	19940504	EP 1993-116127	19931006
	EP 595075	A3	19941117		
	EP 595075	B1	19970917		
	R: BE, DE, ES, FR, GB, IT				
	US 5350637	A	19940927	US 1992-968667	19921030
	JP 06218872	A2	19940809	JP 1993-273762	19931101
PRAI	US 1992-968667		19921030		
	US 1992-968673		19921030		

AB The process comprises combining ≥1 sheets of flexible sintered crystalline **ceramic** foil with ≥1 inorg., e.g., metal, intermetallic, or **ceramic** substrate layers to form a stack that is then heated under slight or moderate pressure at a temperature below the m. p. of the foil and substrate layers to provide well-bonded composite articles that are essentially free of interlaminar cementing or **sealing** materials. The layers of **ceramic** foil have thickness ≤250 μm and ≥1 dimensions >1 cm. The microlaminated components comprise consumer knives, industrial cutting tools, high-temperature airframe structures, turbine and other heat engine parts, including corrosion- and wear-resistant coatings, and other products.

ST **ceramic** foil microlaminate composite; metal layer microlaminate composite; intermetallic layer microlaminate composite; **alumina zirconia** nickel microlaminate composite; stainless steel **alumina zirconia** microlaminate

IT Glass **ceramics**
(alkali metal and alkaline earth aluminosilicate-based, foils, microlaminated products containing metal and intermetallic and **ceramic** substrate layers and, for corrosion and wear resistance)
IT Crankshafts
(bearings manufacture for, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT **Ceramic** materials and wares
(foils, microlaminated products containing metal and intermetallic and **ceramic** substrate layers and, for corrosion and wear resistance)
IT Linings
(for exhausts, manufacture of, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT Laminated products
Piston rings
Pistons
Sealing compositions
(manufacture of, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT Coating materials
(abrasion-resistant, manufacture of, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT Shafts
(cam-, bearings manufacture for, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT Engines
(cams, followers manufacture, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT Engines
(connecting rods, manufacture of, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT Engines
(cylinder heads, manufacture of, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT Linings
(engine cylinder, manufacture of, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)
IT Pistons
(heads, manufacture of, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)

IT Group VIII elements
RL: USES (Uses)
(iron-group, microlaminated products containing **ceramic** foils and, for corrosion and wear resistance)

IT Exhaust systems
(manifolds, liner manufacture for, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)

IT Bearings
(roller, races manufacture for, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)

IT Valves
(seats, manufacture of, flexible sintered crystalline **ceramic** foils and metal and intermetallic and **ceramic** substrate layers in, for corrosion and wear resistance)

IT Chromium alloy, base
Nickel alloy, base
RL: USES (Uses)
(microlaminated products containing **ceramic** foils and, for corrosion and wear resistance)

IT 409-21-2, Silicon carbide, uses 1302-67-6, Spinel (**Mg**(AlO2)2) 1302-93-8, Mullite 1314-23-4, **Zirconia**, uses 1344-28-1, Aluminum oxide (Al2O3), uses 7631-86-9, **Silica**, uses 11118-57-3, Chromium oxide (unspecified) 12033-89-5, Silicon nitride, uses 12045-63-5, Titanium diboride 12055-23-1, Hafnia 12070-08-5, Titanium carbide 12070-14-3, Zirconium carbide 12611-79-9, 410 Stainless steel 13463-67-7, **Titania**, uses 14940-68-2, Zircon 25583-20-4, Titanium nitride 51184-13-5, Sialon 64417-98-7, Yttrium zirconium oxide
RL: USES (Uses)
(**ceramic** foils, microlaminated products containing metal and intermetallic and **ceramic** substrate layers and, for corrosion and wear resistance)

IT 156440-73-2, Aluminum yttrium zirconium oxide (Al0.47Y0.03Zr0.7502.25)
RL: USES (Uses)
(**ceramic** foils, microlaminated products metal and intermetallic substrate layers and, for corrosion and wear resistance)

IT 7429-90-5, Aluminum, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses
RL: USES (Uses)
(microlaminated products containing **ceramic** foils and, for corrosion and wear resistance)

IT 1314-36-9, Yttria, uses
RL: USES (Uses)
(**zirconia ceramic** foils stabilized with, microlaminated products containing metal and intermetallic and **ceramic** substrate layers and, for corrosion and wear resistance)

L51 ANSWER 35 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 1992-056766 [07] WPIX
DNN N1992-043228 DNC C1992-025605
TI Low melting **sealing** glass compsn. - based on tellurium oxide, copper oxide and oxide(s) of other elements e.g. **magnesium**, barium, silver etc..
DC L01 U11 V01 V05
IN CLIFFORD, J F; PETTITT, S E
PA (COOK-N) COOKSON GROUP PLC
CYC 15
PI WO 9200925 A 19920123 (199207)*
RW: AT BE CH DE DK ES FR GB GR IT LU NL SE
W: JP US
PRAI GB 1990-15072 19900709
REP 4.Jnl.Ref; SU 552311; US 3423326; US 4652536; WO 8705006
IC C03C003-12; C03C008-24; C03C014-00; H01L021-58
AB WO 9200925 A UPAB: 19931006
A glass compsn. providing a diametric softening temperature of 380 deg.C or below has the compsn., in mole% calculated as oxide, 50-95% TeO2, 0.1-20% of an oxide of copper, 0.1-40% of one or more oxides of **Mg**, Ba, **Ti**, Nb, Ta, Mo, Ag, Zn, B, W or Tl, and optionally up to 30% of one or more oxides of Pb, V, Li, Na, K, Rb, Cs, Ca, **Zr**, Sr, Hf, **Si**, Ge, **Al**, Ga, In, P, Sn, Sb, Bi, La or a rare earth metal. In each case the oxide may be supplied as precursor in appropriate amount The glass may also include up to 5 weight% of one or more halides of low volatility; pref. it has a coefft. of thermal expansion exceeding 150x10 power(-7), especially at least 190x10 power(-7). The glass may be mixed with 1-50% (based on the total weight) of a filler, partic. zircon, aluminium titanate, cordierite, Nb2O5, Ta2O5 or lithium aluminium silicate. Alternating 5-75 weight% of the glass may be combined with 25-95 weight% of metal flake or powder, especially Ag, Au, **Al** or Cu.
USE/ADVANTAGE - **Sealing** or soldering glass; as a paste for use as a passivator, dielectric, resistor, conductor or die attachment (all claimed). Low softening temperature; low viscosity when molten; good bonding to a wide range of metal **ceramic** and glass substrates. Good resistance to water and chemicals.
1/4
FS CPI EPI
FA AB; GI
MC CPI: L01-A03C

L51 ANSWER 36 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 1992-056765 [07] WPIX
DNN N1992-043227 DNC C1992-025604
TI Tellurium oxide low-melting glass for **sealing** electronic paste - containing tellurium oxide, silver oxide and lead and/or zinc oxide and opt. e.g. **magnesium**, titanium, boron etc. oxide(s).
DC L01 U11 V01 V05
IN CLIFFORD, J F; PETTITT, S E
PA (COOK-N) COOKSON GROUP PLC
CYC 15
PI WO 9200924 A 19920123 (199207)*

RW: AT BE CH DE DK ES FR GB GR IT LU NL SE
W: JP US
PRAI GB 1990-15072 19900709
REP 4.Jnl.Ref; JP 61242927; JP 62036040; US 4652536; US 4945071; WO 8705006
IC C03C003-12; C03C008-24; C03C014-00; H01L021-58
AB WO 9200924 A UPAB: 19931006
Low-melting glass comprises (in mol% calculated as thioxide) : 50-85% TeO2, 0.1-30% Ag2O, 5-30% PbO and/or ZnO and opt. 0.1-44.9% oxide(s) of **Mg**, **Ti**, Ta, Mo, B, W, Tl, V, Li, Na, K, Rb, Cs, Ca, Sr, **Zr**, Hf, **Si**, Ge, **Al**, Ga, In, P, Sn, Sb, Bi, La and/or rare earth, the amount of V, where present, being below 5 mol.%. The components are all opt. supplied as precursor. The glass has a dilatometric softening temperature of 380 deg.C or less.
Glass contains (in mol.%): 65-75% TeO2, 10-25% Ag2O, and 10-20% PbO and/or ZnO; the opt. component is Mo, W, **Mg**, Tl, B or V oxide, especially MoO3 or WO3. The dilatometric softening pt. is 300 deg.C or below and
the coefft. of expansion is greater than 150, pref. greater than 190x10 power(-7). The glass may contain 1-50 pref. 5-30 weight% filler to alter the electrical properties, pref. zircon, **Al** titanate, cordierite, Nb2O5, Ta2O5 or Li-**Al** silicate.
USE/ADVANTAGE - As solder or **sealing** glasses; and in electronic paste formulations (claimed). Glasses have low softening pt. and wet a wide range of glasses, metals and **ceramics**, including electronicm substrates, and are not derived from PbO-B2O3 or PbO-V2O5 eutectic mixts.
1/1
FS CPI EPI
FA AB; GI
MC CPI: L01-H03; L03-A01A3; L03-H04E4

L51 ANSWER 37 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 1992-416665 [51] WPIX
DNC C1992-184849
TI Metal-**ceramic** composite bodies of high wear resistance and strength - comprise nitrided matrix containing insertions of three-dimensional crosslinked aluminium -containing metal phases.
DC L02 M22
IN FEIGE, R; GREIL, P; SCHOLZ, H; THOME, R; TRAVITZKY, N
PA (VALC) VER ALUMINIUM-WERKE BERLIN-BONN AG; (VALC) VAW ALUMINIUM AG
CYC 11
PI DE 4118943 A 19921210 (199251)* 13p C04B041-88
EP 518077 A1 19921216 (199251) DE 16p C04B035-58
R: AT BE DE ES FR GB IT NL PT
WO 9222515 A1 19921223 (199302) DE 52p C04B035-58
W: JP US
ADT DE 4118943 A DE 1991-4118943 19910608; EP 518077 A1 EP 1992-108305 19920516; WO 9222515 A1 WO 1992-EP1176 19920526
PRAI DE 1991-4118943 19910608
REP WO 9001472; WO 9112350
IC ICM C04B035-58; C04B041-88
ICS B32B018-00; C04B035-65; C22C029-16

AB DE 4118943 A UPAB: 19931116
Metal-**ceramic** composite bodies (I) comprise a nitridic matrix containing insertions of a three dimensionally cross-linked **Al** -containing metal phase. The structure contains 15-50 volume% **Al** and 5-30 volume% **Si** in a matrix of finely divided AlN and pref. also Al2O3. Preparation of (I) is also claimed.
A porous nitridic **ceramic** ''pre-body'' is infiltrated with an **Al**-melt and maintained at the reaction temperature until the ''pre-body'' is completely reacted with the metal melt to AlN -containing Al2O3-**Al**-**Si**. The AlSi metal phase contains 1-25 weight% **Mg**. The metal surface of the composite body is **sealed** by a metal oxide layer. The structure contains intermetallic cpds. of **Ti**, Ni, Fe, Co, Zr, Co, Mo, Hf and La.
ADVANTAGE - (I) have high wear resistance, strength and hardness.
Dwg.0/6
FS CPI
FA AB
MC CPI: L02-J01; M22-G03K

L51 ANSWER 38 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1991:191069 CAPLUS
DN 114:191069
TI Manufacture of aluminum nitride **ceramics** having electrically conductive metalized surface layer
IN Hirano, Masanori; Yamauchi, Noriyoshi
PA Noritake Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B041-88
CC 57-2 (Ceramics)
Section cross-reference(s): 56, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02212386	A2	19900823	JP 1989-33327	19890213
PRAI	JP 1989-33327		19890213		

AB An AlN green body is coated on ≥1 sides with a composition containing a high-m.p. metal, its alloy, or compound, and fired at 1500-2000° in a nonoxidizing atmospheric in a **sealed** AlN container to give a metalized AlN sintered body, e.g., useful for substrates for semiconductor devices and crucibles for drawing single crystals. Preferably, the composition contains W, Mo, Cr, Pt, Ta, W-Mn alloy, W-Mo alloy, W-Re alloy, W-Pt alloy, and/or Mo-Pt alloy, or nitrides, borides, or carbides of high-m.p. metals, and addnl. ≥1 oxides of **Mg**, Ca, Sr, Ba, Y, La, Ce, **Ti**, **Zr**, Nb, Ta, Cr, Mo, W, Mn, B, **Al**, and **Si**. Thus, an AlN substrate containing 4 weight% Y2O3 was screen printed with a paste containing W 100, AlN 9.6, and Y2O3 0.4 parts, and fired to give a coating with peeling strength 4.3 kg/mm2.
ST aluminum nitride **ceramic** metalization; tungsten yttria aluminum nitride metalization; semiconductor device substrate aluminum nitride

IT **Ceramic** materials and wares
(aluminum nitride, metalization of, with tungsten)
IT 24304-00-5, Aluminum nitride
RL: USES (Uses)
(**ceramics**, metalization of, with tungsten, for semiconductor device substrates)
IT 1305-78-8, Calcia, uses and miscellaneous 1314-36-9, Yttria, uses and miscellaneous 1344-28-1, **Alumina**, uses and miscellaneous
RL: USES (Uses)
(metalization composition containing, tungsten-based, for aluminum nitride substrates)
IT 7439-98-7, Molybdenum, uses and miscellaneous 7440-06-4, Platinum, uses and miscellaneous 7440-25-7, Tantalum, uses and miscellaneous 7440-33-7, Tungsten, uses and miscellaneous 7440-47-3, Chromium, uses and miscellaneous 11110-93-3 12667-08-2 39306-00-8 60501-15-7 133553-34-1
RL: USES (Uses)
(metalization with, of aluminum nitride substrates for semiconductor devices)

L51 ANSWER 39 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1991:28921 CAPLUS
DN 114:28921
TI Glass-**ceramic** ring laser gyroscope frames, and their manufacture
IN Taylor, Mark Peter
PA Corning, Inc., USA
SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C03C008-24
ICS C03C010-02; C03C027-10
CC 57-1 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 398004	A1	19901122	EP 1990-106119	19900330
	R: BE, DE, FR, GB, NL				
	US 4976765	A	19901211	US 1989-351715	19890515
	CA 2011941	AA	19901115	CA 1990-2011941	19900312
PRAI	US 1989-351715		19890515		

AB The frames comprise glass-**ceramic** members consisting essentially of SiO_2 64-67, Al_2O_3 21-24, Li_2O 2.6-3.7, MgO 0.5-1.5, BaO 0-1, ZnO 0.7-4.2, TiO_2 2.0-3.25, ZrO_2 1.25-2.5 (TiO_2 + ZrO_2 4-5.25), and As_2O_3 0-1 weight%, which are fusion-**sealed** into an integral body through a thermally devitrifiable frit consisting essentially of PbO 62-68, TiO_2 12-20, SiO_2 12-18, Al_2O_3 1-3, and B_2O_3 1-3 weight%, which, upon fusion-**sealing**, crystallizes in situ to perovskite-type Pb titanate crystals. The frames are manufactured by (a) forming the members, (b) applying a coating of the frit, (c) assembling the frit-coated members, (d) heating at least the frit-coated contact surfaces of the members at 700-800° for a duration sufficient to effect a fusion **seal**

between the contacting surfaces and to cause in situ crystallization of the Pb titanate crystals, and (e) cooling the integral body to room temperature

ST laser gyroscope glass **ceramic**; **sealing** glass **ceramic** gyroscope; lead oxide **sealing** glass **ceramic**; **titania sealing** glass **ceramic** ; **silica sealing** glass **ceramic**; **alumina sealing** glass **ceramic**; boron oxide **sealing** glass **ceramic**; lead titanate glass **ceramic sealing** gyroscope

IT Glass **ceramics**
(aluminosilicate, frame components, for ring laser gyroscopes, bonding of, glass-**ceramic sealing** compns. for)

IT Frits
(lead titanium aluminoborosilicate, in glass-**ceramic sealing** of glass-**ceramic** ring laser gyroscope frame components)

IT Gyroscopes
(laser, rings, glass-**ceramic** frame components for, bonding of, glass-**ceramic sealing** compns. for)

IT 7439-92-1
RL: USES (Uses)
(frits, lead titanium aluminoborosilicate, in glass-**ceramic sealing** of glass-**ceramic** ring laser gyroscope frame components)

IT 1304-28-5, Barium oxide, uses and miscellaneous 1309-48-4, **Magnesia**, uses and miscellaneous 1314-13-2, Zinc oxide, uses and miscellaneous 1314-23-4, **Zirconia**, uses and miscellaneous 1327-53-3, Arsenic trioxide 12057-24-8, Lithium oxide, uses and miscellaneous 13463-67-7, **Titania**, uses and miscellaneous
RL: USES (Uses)
(glass-**ceramics**, aluminosilicate, ring laser gyroscope frame components containing, bonding of, glass-**ceramic sealing** compns. for)

IT 12060-00-3, Lead titanate
RL: USES (Uses)
(glass-**ceramics**, **seals**, in bonding of glass-**ceramic** ring laser gyroscope frame components)

L51 ANSWER 40 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1990:616831 CAPLUS
DN 113:216831
TI Manufacture of **alumina-silica**, **alumina** -lithia-**silica**, and other glass powders and glass-**ceramics** from gels
IN De Lait, Frans G. A.; Goldman, Arnold E.; James, Thomas W.; Welsbie, Roland A.
PA Litton Systems, Inc., USA
SO Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C03C001-00

ICS C03B008-02; C03C003-00; C03B019-06
CC 57-1 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 390397	A2	19901003	EP 1990-302959	19900320
	EP 390397	A3	19910102		
	R: DE, FR, GB, IT				
	JP 02289446	A2	19901129	JP 1990-69888	19900322
PRAI	US 1989-326317		19890321		

AB The process comprises forming a Me2CHOH solution of a mixture of **Al** sec-butoxide, **Ti** isopropoxide and **Si**(OEt)4, sep. forming a Me2CHOH solution of a mixture of **Mg** 2-4 pentanedionate and **Zr** 2,4-pentanedionate, together with either Zn 2,4-pentane (sic) or Zn 2,4-pentanedionate, and mixing the 2 solns. The Li2O-Al2O3-SiO2 glass powder has particle size approx. 40-100 μm, pore radius approx. 15-200 Å peaking at 80 Å, and is substantially free of water and OH groups. The powder is prepared by preparing the gel, drying the gel, milling the gel, calcining the powder at a predetd. temperature/time schedule, wet-milling a suspension of the powder, and drying and removing the OH groups from the powder. The glass-**ceramics** are prepared by packing the powder in a mold under vibration, **sealing** the mold, and isostatically pressing the mold.

ST **alumina** lithia **silica** glass powder; gel glass **ceramic** powder; aluminum butoxide glass **ceramic** powder; titanium isopropoxide glass **ceramic** powder; tetraethoxysilane glass **ceramic** powder; **magnesium** acetylacetonate glass **ceramic** powder; zirconium acetylacetonate glass **ceramic** powder; zinc acetylacetonate glass **ceramic** powder; tributyl phosphate glass **ceramic** powder

IT Gels
(glass and glass-**ceramic** powder manufacture from)

IT Glass **ceramics**
(manufacture of, powder manufacture for, from gels)

IT Viscoelastic materials
Rubber, neoprene, uses and miscellaneous
Urethane polymers, uses and miscellaneous
RL: USES (Uses)
(pressing in, isostatic, of glass and glass-**ceramic** powders)

IT Glass, oxide
RL: PROC (Process)
(powdered, aluminosilicate, manufacture of, from gels)

IT Glass, oxide
RL: PROC (Process)
(powdered, lithium aluminosilicate, manufacture of, from gels)

IT 123-54-6D, 2,4-Pentanedione, metal complexes 546-68-9 2269-22-9, Aluminum sec-butoxide 14024-56-7, **Magnesium** acetylacetonate 14024-63-6, Zinc acetylacetonate 17501-44-9, Zirconium acetylacetonate 18115-70-3, Lithium acetylacetonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of, for gels for glass and glass-**ceramic** powders)

IT 126-73-8, Tributyl phosphate, uses and miscellaneous

RL: USES (Uses)
(in gel preparation for glass and glass-**ceramic** powders)
IT 9010-98-4
RL: USES (Uses)
(rubber, pressing in, isostatic, of glass and glass-**ceramic** powders)

L51 ANSWER 41 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 14
AN 1988:496020 CAPLUS
DN 109:96020
TI Forming of **seals** on phosphoric-acid fuel-cell electrode edges
IN Ueno, Sanji; Segawa, Noboru; Kogami, Taiji
PA Toshiba Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01M008-02
ICS H01M004-88
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 63126170	A2	19880530	JP 1986-271758	19861117
PRAI JP 1986-271758		19861117		

AB Edges of porous substrates of H3PO4 fuel-cell electrodes are filled parallel to the reaction **gas** flow with a metal phosphate and impregnated with H3PO4 to form **seals** for the electrodes. The phosphate is selected from H3PO4 salts of **Si**, **Mg**, Ca, **Zr**, **Ti**, and **Al**. Thus, ribbed C-electrode substrates (2-mm thick, 70% porosity) were impregnated with a 5000-50,000-cP **Si** phosphate slurry under reduced pressure and dried at 150°, the impregnation and rying was repeated once, the substrates were stacked with catalyst layers and electrolyte matrixes, the matrixes and the impregnated edges of the substrates were impregnated with 100% H3PO4, and 2 electrode-electrolyte matrix composites were assembled to form a unit cell. When operated at 200° and 150 mA/cm2 using a H-20% CO2 fuel mixture and **air** oxidant, a fuel cell using the invention unit cells retained a constant output voltage for 10,000 h, whereas that of a control cell showed a significant decrease after 8000 h.
ST fuel cell electrode **gas seal**; phosphoric acid fuel cell **seal**; silicon phosphate fuel cell **seal**
IT **Seals** (mechanical)
(silicon phosphate, for phosphoric-acid fuel-cell electrodes)
IT Electrodes
(fuel-cell, phosphoric-acid, silicon phosphate **gas seals** for)
IT 7440-44-0, Carbon, uses and miscellaneous
RL: USES (Uses)
(electrodes, with silicon phosphate **gas seals**, for phosphoric-acid fuel cells)
IT 51404-74-1

RL: USES (Uses)
(**gas seals**, electrodes with, for phosphoric-acid fuel cells)

L51 ANSWER 42 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN DUPLICATE 15
AN 1987-221235 [31] WPIX
DNC C1987-093072
TI High density refractory composite **ceramics** - comprise refractory oxide(s), carbide(s), nitride(s), silicide(s), boride(s) or sulphide(s) and a plastic deformable binder.
DC L02
IN KURFMAN, V B; MCDONALD, R R; RUSSELL, P M
PA (DOWC) DOW CHEM CO
CYC 2
PI WO 8704425 A 19870730 (198731)* EN 71p
W: KR SE
SE 8703702 A 19870925 (198805)
SE 461092 B 19900108 (199004)
KR 9007839 B 19901020 (199204)#
ADT WO 8704425 A WO 1986-US169 19860127
PRAI WO 1986-US169 19860127
REP US 28301; US 31355; US 3230286; US 3409419; US 3455682; US 3514271; US 3525610; US 3622313; US 3650646; US 3824097; US 4007251; US 4008023; US 4023966; US 4041123; US 4077109; US 4081272; US 4094709; US 4142888; US 4255103; US 4276096; US 4339271; US 4341557; US 4368074; US 4379852
IC C04B035-56
AB WO 8704425 A UPAB: 19930922
High density refractory composite **ceramic** having about 10% greater toughness than other composite of similar compsn. and geometry is formed of material selected from oxides, carbrides, nitrides, silicides, borides, sulphides and mixts. of these, and a plastic deformable brinder at least partially filling the interstices between refractory particles.
The **ceramic** pref. has 25% greater toughness; and pref. has 10% pref. 100% greater brinder distribution than other composite **ceramic** of similar compsn.
Ceramic grain size is 10 micron max, pref. below 1 micron; particle circularity number is less than 17, pref. less than 13.2. Binder is one or more of Co, Ni, Fe, W, Mo, Ta, Ti, Cr, Nl, B, **Zr**, V, **Si**, Pd, Hf, **Al** and Cu. Binder content is 0.5-30 vol% pref. 6.20 vol%. **Ceramic** is one or more of an oxide of **Al**, **Zr**, **Mg**, Th, Be and Il, multite, zircon and spinel, carbride of W, Ta, **Ti**, Nl, **Zr**, B, Hf, **Si** and Nb/B; nitride of **Al**, **Ti**, Zi, Ta, Hf, Nb, B and **Si**; boride of **Ti**, Cr, **Zr**, Ta, Mo and W; and sulphide of Ce, Mo, Cd, Zn, **Ti**, **Mg** and **Zr**. A specific composite contain WC and Co.
USE - An cutting, drilling etc. tools, machine parts, pump **seals**, blast nozzles, impact parts etc.
0/5
FS CPI
FA AB
MC CPI: L02-F02; L02-F04; L02-G08

L51 ANSWER 43 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 1987-165762 [24] WPIX
DNN N1987-124133 DNC C1987-068831
TI Irregularly shaped fine particles, preparation - by spraying inorganic fine particle slurry to form granules and calcining.
DC A60 A85 L02 L03 X12
PA (ELED) DENKI KAGAKU KOGYO KK
CYC 1
PI JP 62096537 A 19870506 (198724)* 3p
ADT JP 62096537 A JP 1985-236363 19851024
PRAI JP 1985-236363 19851024
IC C01B013-14; C01B033-18; C08K007-00; C08K009-00; H01B003-08
AB JP 62096537 A UPAB: 19930922
Irregularly shaped fine particles are prepared by making slurry of inorganic cpd. fine particles with viscosity below 100 cps, spraying the slurry to form granules and then calcining.
The inorganic cpd. is e.g. **silica**, **titania**, **alumina**, **zirconia**, **magnesia**, etc. The irregularly shaped particles pref. have particle size of 20-200 micron and doughnut like shape. The slurry has viscosity below 100 (20-70) cps measured with B type viscosimeter at rotor speed 60 rpm. Calcination is preferably at 300-1500 deg. C.
USE/ADVANTAGE - The irregularly shaped fine particles can be used especially as filler of semiconductor element **sealing** resin compsn., raw material for mfg. **ceramic** filter or filler for gas chromatography.
0/0
FS CPI EPI
FA AB
MC CPI: A08-R; A12-E04; A12-E07C; L03-A02C
EPI: X12-D01B

L51 ANSWER 44 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1989:236128 CAPLUS
DN 110:236128
TI Erosion-corrosion resistant coatings for coal-fired boiler tubes. I: Materials selection and evaluation
AU King, H. W.; Murphy, J. G.
CS Dep. Eng. Phys., Tech. Univ. Nova Scotia, Halifax, NS, B3J 2X4, Can.
SO Canadian Ceramics Quarterly (1987), 56(4), 13-20
CODEN: CCQUEC; ISSN: 0831-2974
DT Journal
LA English
CC 57-9 (Ceramics)
Section cross-reference(s): 52, 55
AB A series of refractory paints, enamels, glasses, glass-**ceramics**, and com. refractory cements and mortars were tested as potential coating materials for the protection of tubes in coal-fired boilers. Coatings, deposited on typical boiler tube steels by brushing or spraying, were subjected to firing procedures which simulate conditions in a coal-fired boiler and evaluated in terms of adhesion, shock resistance, and expansion

during thermal cycling and of their resistance to particulate erosion. The erosion of the coating and its thermal expansion relative to the boiler steel were identified as the critical parameters for the selection of an effective coating material to resist fly-ash erosion. On the basis of these tests, mixed refractory mortar-cements, with and without added stainless steel powder, showed the greatest potential for the development of protective coatings for coal-fired boiler tubes.

ST coating protective boiler tube; mortar protective coating boiler tube; refractory protective coating boiler tube; enamel protective coating boiler tube; glass **ceramic** coating boiler tube; cement protective coating boiler tube; coal fired boiler tube protection

IT Cement
Glass **ceramics**
Mortar
(coatings, on coal-fired boiler tubes for corrosion-erosion protection)

IT Refractories
(coatings, phosphate-bonded, for erosion-corrosion protection of coal-fired boiler tubes)

IT Enamels
(on boiler tubes, for corrosion-erosion protection)

IT Pipes and Tubes
(boiler, corrosion and erosion of coal-fired, prevention of, coatings for)

IT Glass, oxide
RL: USES (Uses)
(**sealing**, coatings, on coal-fired boiler tubes for corrosion-erosion protection)

IT 409-21-2, Silicon carbide, uses and miscellaneous 1302-37-0, Spodumene 1302-52-9, Beryl 1302-76-7, Kyanite 1308-06-1, Cobalt oxide (Co3O4) 1308-31-2, Chromite 1308-38-9, Chromium sesquioxide, uses and miscellaneous 1309-37-1, Ferric oxide, uses and miscellaneous 1309-48-4, **Magnesia**, uses and miscellaneous 1314-23-4, **Zirconia**, uses and miscellaneous 1318-00-9, Vermiculite 6834-92-0 7631-86-9, **Silica**, uses and miscellaneous 12012-35-0, Chromium carbide (Cr3C2) 12045-63-5, Titanium diboride 12070-12-1, Tungsten monocarbide 12136-78-6, Molybdenum disilicide 12251-43-3, Microcline 13463-67-7, **Titania**, uses and miscellaneous 14940-68-2, Zircon
RL: USES (Uses)
(coatings containing, phosphate-bonded refractory, for erosion-corrosion protection of coal-fired boiler tubes)

IT 11134-23-9, AISI 316L
RL: USES (Uses)
(glass coatings containing powdered, on coal-fired boiler tubes for corrosion-erosion protection)

IT 1313-99-1, Nickel monoxide, uses and miscellaneous 1314-06-3, Nickel oxide (Ni2O3)
RL: USES (Uses)
(mortar coatings containing, on coal-fired bioler tubes for corrosion-erosion protection)

IT 1309-37-1, Ferric oxide, uses and miscellaneous 1317-61-9, Iron oxide (Fe3O4), uses and miscellaneous 1344-28-1, **Alumina**, uses and

miscellaneous 7440-02-0, Nickel, uses and miscellaneous 53597-63-0, AISI 410L
RL: USES (Uses)
(mortar coatings containing, on coal-fired boiler tubes for corrosion-erosion protection)

L51 ANSWER 45 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1987:181284 CAPLUS
DN 106:181284
TI Simultaneous determination of trace impurities in new **ceramics** by inductively-coupled plasma emission spectroscopy
AU Uchida, Hiroshi; Ando, Junichi; Takagi, Nobuyuki
CS Ind. Res. Inst., Yokohama, 236, Japan
SO Kenkyu Hokoku - Kanagawa-ken Kogyo Shikensho (1986), (57), 44-8
CODEN: KKSKAU; ISSN: 0451-3169
DT Journal
LA Japanese
CC 57-2 (Ceramics)
Section cross-reference(s): 79
AB Anal. sample solns. of **alumina**, silicon nitride, and silicon carbide **ceramics** were prepared by dissoln. of powdered samples in a **sealed** teflon vessel by treatment with H2SO4 for the former and with a mixture of HNO3 and HF for the latter 2 samples. The resulting sample solns. were used for simultaneous determination of **Al**, B, Ca, Cr, Cu, Fe, Ga, **Mg**, Mn, Mo, Na, Ni, **Si**, Ti, V, Zn, and **Zr** by inductively-coupled plasma emission spectroscopy, with Be as an internal reference, by the standard anal. procedure. Microgram amts. of these impurities could be determined
ST plasma emission spectroscopy impurity analysis; analysis trace impurity **ceramic**
IT **Ceramic** materials and wares
(determination of trace impurities in, by inductively coupled plasma emission spectroscopy)
IT 409-21-2, Silicon carbide, analysis 1344-28-1, analysis 12033-89-5, Silicon nitride, analysis
RL: ANST (Analytical study)
(determination of trace impurities in, by inductively coupled plasma emission spectroscopy)
IT 7429-90-5, Aluminum, analysis 7439-89-6, Iron, analysis 7439-95-4, **Magnesium**, analysis 7439-96-5, Manganese, analysis 7439-98-7, Molybdenum, analysis 7440-02-0, Nickel, analysis 7440-21-3, Silicon, analysis 7440-23-5, Sodium, analysis 7440-32-6, Titanium, analysis 7440-42-8, Boron, analysis 7440-47-3, Chromium, analysis 7440-50-8, Copper, analysis 7440-55-3, Gallium, analysis 7440-62-2, Vanadium, analysis 7440-66-6, Zinc, analysis 7440-67-7, Zirconium, analysis 7440-70-2, Calcium, analysis
RL: ANST (Analytical study)
(determination of traces of, in **ceramics**, by inductively coupled plasma emission spectroscopy)

L51 ANSWER 46 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 1986-031450 [05] WPIX
DNN N1986-022728 DNC C1986-013078
TI Joining of **ceramic** to metallic material - by hermetic **sealing** process in presence of powdery pressing medium.
DC L02 M23 P55 P56
PA (MITO) MITSUBISHI HEAVY IND CO LTD
CYC 1
PI JP 60251180 A 19851211 (198605)* 7p
ADT JP 60251180 A JP 1984-103729 19840524
PRAI JP 1984-103729 19840524
IC B23K020-00; B23P011-00; C04B037-02
AB JP 60251180 A UPAB: 19930922
Joining part of **ceramic** is made into round headed cylinder, and a metallic tube of which one end is closed is covered on its surface and fitted to the cylindrical joining part of **ceramic**, and **sealed** hermetically by putting in a receptacle together with powdery pressing medium. The **ceramic** and metallic tube are united by diffusion by heating and pressing using autoclave. Then the metallic tube is joined with metallic material by welding.

Pref. Ni and metallic oxide, metallic nitride or metallic carbide, or Cu and metallic oxide, metallic nitride or metallic carbide are coated on the surface of cylindrical part of the **ceramic** body or on the inner surface of the emtallic tube as the insert. Typically the insert is a mixture of one of Cu2O, NiO, SiO2, FeO, AgO, Al2O3, MoO, TiO2, ZnO, AuO, Cr2O3, CoO, ZrO2, TaO, WO2, NbO, MgO, CaO and y2O3 and one or more of Cu, Ni, **Si**, Fe, Ag, **Al**, Mo, **Ti**, Zn, Au, Cr, Co, **Zr**, Ta, W, Nb and **Mg**.

USE/ADVANTAGE - **Ceramic** rotor and metallic shaft are joined effectively, (i.e., turbocharger, gas turbine, drill of excavator, etc. can be produced).

0/5
FS CPI GMPI
FA AB
MC CPI: L02-J01C; M23-E

L51 ANSWER 47 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 1986-031449 [05] WPIX
DNN N1986-022727 DNC C1986-013077
TI Joining **ceramic** and metallic materials - by heating and pressing in autoclave using powdered pressing medium then welding.
DC L02 M23 P55
PA (MITO) MITSUBISHI HEAVY IND CO LTD
CYC 1
PI JP 60251179 A 19851211 (198605)* 8p
ADT JP 60251179 A JP 1984-103728 19840524
PRAI JP 1984-103728 19840524
IC B23K020-00; C04B037-02
AB JP 60251179 A UPAB: 19930922
Joining part of **ceramic** is made cylindrical and a groove is formed in the middle of the cylinder in its circumferential direction. The

metallic tube of which one end is closed, is fitted by covering on the cylindrical part of the **ceramic** material and hermetically **sealed** in a receptacle together with powdery pressing medium. The **ceramic** and metallic tube are united by diffusion by heating and pressing using autoclave. Then the metallic tube and metallic material are joined by welding.

Pref. Ni and metallic oxide, nitride or carbide, or Cu and metallic oxide, nitride or carbide are coated on the surface of cylindrical part of the **ceramic** body or on the inner surface of the metallic tube as the insert material. Inserting material is a mixture of one of Cu2O, NiO, SiO2, FeO, AgO, Al2O3, MoO, TiO2, ZnO, AuO, Cr2O3, CoO, ZrO2, TaO, WO2, NbO, MgO, CaO and Y2O3 and one of Cu, Ni, **Si**, Fe, Ag, **Al**, Mo, **Ti**, Zn, Au, Cr, Co, **Zr**, Ta, W, Nb and **Mg**. Especially insert material is Ni, Cu or Cr.

USE/ADVANTAGE - **Ceramic** rotor and metallic shaft are joined effectively, (i.e., turbocharger, gas turbine, drill of excavator, etc. are produced effectively.).

0/5

FS CPI GMPI
FA AB
MC CPI: L02-J01C; M23-E

L51 ANSWER 48 OF 49 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 1985-298751 [48] WPIX
DNC C1985-129184
TI **Ceramic** body having multilayer covering films - used for abrasion-resistant tools and for cutting tools.
DC L02 P54 P56
PA (MITV) MITSUBISHI METAL CORP
CYC 1
PI JP 60204687 A 19851016 (198548)* 7p
JP 01032193 B 19890629 (198930)
ADT JP 60204687 A JP 1984-63028 19840330
PRAI JP 1984-63028 19840330
IC B23B027-14; B23P015-28; C04B041-87
AB JP 60204687 A UPAB: 19930925
Layers of 0.5-10 microns mean thickness, made of at least one layer of carbide, nitride,carbonitride oxycarbide and oxycarbonitride of **Ti** and oxide of **Al** are formed at least on a part of surface required to have high abrasion-resistance of a base body of silicon nitride **ceramic** having not higher than 5% porosity as the intermediate layers. An outer layer made of B and N (atom ratio of B/N 1.0-1.2) which contains cubic boron nitride and has 0.2-10 microns mean thickness is formed upon the intermediate layers. The base body of silicon nitride consists of 5.37 weight% of at least one carbide, nitride or carbonitride of Gp. IVa elements, 2-15 weight% of at least one oxide of **Al**, **Mg**, **Zr**, Y and **Si** and nitride of **Al** and silicon nitride.

USE/ADVANTAGE - It is a **ceramic** having high hardness, high abrasion-resistance and high heat-resistance. It is useful as a material for roll, guide roller, **seal** ring, nozzle, die, abrasion-resistant tool, cutting tool, etc.

0/0
FS CPI GMPI
FA AB
MC CPI: L02-H02B; L02-J02C

L51 ANSWER 49 OF 49 CAPLUS COPYRIGHT 2003 ACS on STN
AN 1980:624457 CAPLUS
DN 93:224457
TI Sinter containing high-density boron nitride
PA Nippon Oils & Fats Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC C22C029-00; C22C001-00
CC 56-3 (Nonferrous Metals and Alloys)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55097448	A2	19800724	JP 1978-161009	19781228
	JP 58023459	B4	19830516		
PRAI	JP 1978-161009		19781228		

AB A mixture of wurtzite-type BN(I) 40-96.5, ≥1 of **ceramic** materials 3-50, and of metals 0.5-20 volume% is sintered at 4-7 GPa and 1000-2300° to obtain dense BN comprising I ≥10 and cubic BN ≤90 volume%. The **ceramic** materials may be the following: nitrides of **Al**, **Mg**, **Si**, Cr, and Mo; oxides of **Al**, **Mg**, **Ti**, Cr, Y, **Si**, Be, and **Zr**; borides of **Ti**, **Zr**, Hf, W, Ta, Cr, and Mo; and carbides of B, Cr, **Si**, W, and Mo. The metals may be Ni, Co, Cr, Mn, and Fe as binder; Mo, W, and V as binder, inhibitor of grain growth, and strengthening agent; and **Al**, **Mg**, **Si**, **Ti**, **Zr**, and Hf as the wetting agent for I. The product is used as a cutting tool for hardened steel. Thus, 0.385-g mixture [75605-01-5] of I 92.1, Cr3C2 5, WC 2.3, Ni 0.2, Mo 0.1, and **Al** 0.3 volume% was compacted to a 10 diameter x 2 mm plate, **sealed** in a 0.5-mm thick Mo capsule, sintered at 5.6 GPa and 1400° for 15 min, cooled, depressurized, cut off from 1 Mo layer with a SiC grinder, polished with a diamond grinder, and cut to 4 pieces. A piece was brazed on a steel rod with Ag-base alloy. The Vickers hardness (1 kg) of the sintered alloy containing 100% I phase by x-ray diffraction was 4230 kg/mm2, and flank wear was 0.2 mm when SKD 61 [12741-56-9] steel hardened to Rockwell C 53 was cut (117 m/min, 0.5 mm depth, and 0.11 mm/revolution) for 20 min, compared with 3100 and damage after 5 min with a 92.7:7.3 mixture of I and WC.

ST boron nitride sintering cutter
IT Tools
(boron nitride in sintered, for steel machining)
IT 12741-56-9
RL: USES (Uses)
(cutting of hardened, sintered bit for, boron nitride in)
IT 75605-01-5

RL: USES (Uses)
(sintered high d., cutting tip for steel machining from)
IT 10043-11-5, properties
RL: PRP (Properties)
(sintered-high d., wurtzite structure in, for cutting tips)

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